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Transplanting EU waste law

Fernandes Más, Heyd

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Document Version

Publisher's PDF, also known as Version of record

Publication date:

2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Fernandes Más, H. (2016). *Transplanting EU waste law: The European waste electrical and electronic equipment directives as a source of inspiration to Brazilian law and policy*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

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Transplanting EU Waste Law

Heyd Fernandes Más

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Vormgeving en opmaak binnenwerk: Albertjan Tollenaar

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ISBN 978-90- 367-9199-1 (print)

978-90- 367-9198- 4 (e-book)

NUR 823



university of
 groningen

Transplanting EU Waste Law

The European Waste Electrical and Electronic Equipment
Directives as a source of inspiration to Brazilian Law and Policy

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. E. Sterken
and in accordance with
the decision by the College of Deans

This thesis will be defended in public on

Monday 14 November 2016 at 12.45 hours

by

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*'(...) the truth is not in the setting out or in the arriving: it comes to us in the middle of the journey.'*¹

João Guimarães Rosa (1908-1967)

-
1. The Devil to Pay in the Backlands (Knopf 1963) 52. Original in Portuguese was first published in 1956: '(...) o real não está na saída nem na chegada: ele se dispõe para a gente é no meio da travessia.' Grande Sertão: Veredas (Nova Fronteira 2001) 80. João Guimarães Rosa is considered one of the greatest innovators of narrative and language in Portuguese and Brazil's greatest fiction writer.

Acknowledgments

This work has benefited immensely from the priceless inputs of various people. Among them, I would like to mention Jan Jans and Kars de Graaf, my supervisors, who have made insightful comments and suggestions and trusted me the freedom to develop my research. I certainly could not have become the independent researcher I am today without their support.

I am deeply thankful to Ko de Ridder, who has given indispensable and patient guidance in developing the chapter on legal transplant theories; to Barbara Brink for her kind attention and insights to work on the research approach; Bert Marseille, for the ideas and instructions on how to perform quality interviews; and Albertjan Tollenaar, for his selfless interest and readiness to help. I would also like to extend appreciation to all my fellow PhDs students and colleagues from the Law Faculty always ready to ‘brainstorm’ about my ideas, and to support me through my struggles. Thank you for your kindness and wisdom.

I am grateful to the colleagues in the European Institutions, the ones in each of the national organisations and ministries of the study cases, and the international organisations on the topic that have invested time and shared their knowledge. They have supported me throughout the whole project, and I would not have achieved this result without them.

Last but in any ways not least, I specially thank my paranymphs and dear Dutch friends, Nicole Hoogstra and Annalies Outhuijse, for their loving friendship and priceless help in so many occasions; my boyfriend and his family, for their care, love and patience specially in the last difficult months when I was not quite myself; and my family, for coping with the distance and the ‘*saudade*’.¹ I will be forever thankful for your selfless decision of ‘letting me go’.

To all these and more people, I would like to convey my heartfelt gratitude and sincere appreciation.

Heyd Fernandes Más
Groningen, October 2016

2. *Saudade* (n) a nostalgic longing to be near again to something or someone that is distant, or that has been loved and then lost; ‘the love that remains’ (pronunciation /sauˈda:ðə/).

Abbreviations

ABRELPE	Brazilian Association of Public Cleaning Companies and Special Waste
ABINEE	Brazilian Electrical and Electronics Industry Association
ADEME	Environment Agency and Energy Management
BIS	Department of Business, Innovation and Skills
CONAMA	National Council for the Environment
DTI	Department of Trade and Industry
EAP	Environment Action Programme
EC	European Commission
EEA	European Environment Agency
EP	European Parliament
EPR	Extended Producer Responsibility
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources
IBGE	Brazilian Institute of Geography and Statistics
IenM	Ministry of Infrastructure and the Environment
MMA	Brazilian Ministry of Environment
MS	European Member State
NPSW	National Policy on Solid Waste
OECD	Organisation for Economic Cooperation and Development
PCS	Producer Compliance Scheme
PPP	Polluter Pays Principle
RTC	Red Tape Challenge
SINIR	National Information System on Solid Waste Management
SISNAMA	National System for the Environment
TFEU	Treaty on the Functioning of the European Union
UNEP	United Nations Development Programme
VROM	Ministry of Housing, Spatial Planning and the Environment
WEEE	Waste Electrical and Electronic Equipment
WFD	Waste Framework Directive

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PART I

The Research Approach

Introduction

1.1 Reasons for this Research

1.1.1 Why Waste?

Even though waste of any kind has never been an attractive topic for discussions it is a considerable environmental, social, and economic issue as well as a growing problem in just about any country nowadays. The amount of waste generated worldwide is continuing to rise as world cities generate about 1.3 billion tons of solid waste per year. This volume is expected to increase to 2.2 billion tons per year by 2025, according to official reports as published by the World Bank.³ An estimate from today's annual global costs for management of solid waste reaches the figure of \$205.4 billion, rising to about \$375.5 billion in 2025. It is known that the increases in costs will be most severe in low income countries (more than a 5-fold increase) and lower-middle income countries (more than a 4-fold increase) given that waste generation rates are expected to more than double over the next twenty years in lower income countries.⁴ The multiple interests in this subject is not only due to its global dimensions, but also a result of concerns towards its impact on human health and the environment, added to its potential to enable economic benefits, jobs in the waste management sector, and valuable resources from recovery of materials. When simply landfilled, they threaten all these possibilities.

1.1.2 Why e-waste?

E-waste is one of the terms used to refer to end-of-life electrical and electronic equipment or waste electrical electronic equipment (WEEE). The interest in studying WEEE originates from concerns regarding the exponential growth of this complex waste stream. E-waste covers a large variety of products which composition varies from hazardous components to valuable and

3. Daniel Hoornweg and Perinaz Bhada-Tata, 'What a Waste: A Global Review of Solid Waste Management, Urban Development Series – Knowledge Papers No 15' (World Bank 2012) executive summary <<http://go.worldbank.org/BCQEP0TMO0>> accessed 15 May 2014.

4. *ibidem*.

precious materials in a considerable amount that could lead to resource potential. It has been recognised as the fastest growing waste stream since data from the nineties was analysed later in the same decade. The markets in which these products are produced and consumed are also rapidly growing. And the replacement rate of products such as laptops, mobile phones, television sets, among others – while still working properly – has increased considerably.

1.1.3 Why Europe and Brazil?

When approaching the waste management topic, one rapidly identifies the complexity of connections on this matter due to the variety of actors and conflicting interests involved. Governments worldwide elaborate their regulation on waste, to find a balance to such a complex equation, composed by economy, employment, public health, environment, energy, producers and consumers. As a result of this challenging feature, the process of developing clear and effective regulations for treatment and reduction of waste can be observed in quite different stages if compared among the countries. This study observes that the European Union has started this process long before Brazil, and in an overall perspective, it indicates to have reached considerably positive results.

Regarding the state of affairs in Brazil, the country's economic development over the past few decades has led to a rapid increase in waste, and although there had been a few local regulations for waste streams and issues relating to it, the legal instrument issued for dealing with the waste problem in a national level dates from 2010, when the National Policy for Solid Waste (NPSW)⁵ was established by Federal Law No 12.305. Its clauses, however, are still lacking in further definition and, as a result, problems and discussions originating from them are still being identified. The process as a whole is therefore only just beginning. As a consequence, many municipalities and governments have not yet developed the 'Solid Waste Management Plans' as determined by the NPSW. Agreements to be negotiated between industry and public sector are still scarce, and a way of involving all actors in this growing challenge is not clear. Hence, there is a mismatch between the implementation agenda and the deadlines established by the legal framework. Some critics mention the lack of clear specific enforcement and sanctions in the text of the NPSW as being one of the main reasons for the existence of such difficulties. Nevertheless, as a consequence of this rather recent legal concern on waste regulation society still has not been provided with the suitable consciousness for preventing and reducing waste production through basic education or national policies of instruction for such matter. It is therefore inter-

5. In Portuguese, Política Nacional de Resíduos Sólidos (PNRS).

esting to make a comparison with a case where there is more experience with a legal framework for waste management. A comparison could enable us to look for guidance to improve the performance of waste management in the country.

The current legal framework in the EU differs considerably from the Brazilian framework. The Waste Framework Directive – central to European Waste Law – was first issued back in 1975, had substantial amendments in 1991 and, in 2006, it was codified. The new codified waste Framework Directive (Directive 2006/12/EC) was then revised in order to modernise and streamline its provisions (Directive 2008/98/EC.) The European Waste Electrical and Electronic Equipment Directives, also called WEEE Directives, are based on this legal framework. Member States are tasked to provide for effective, proportionate and dissuasive penalties to be imposed on natural and legal persons responsible for waste management, such as waste producers, holders, brokers, dealers, transporters and collectors, establishments or undertakings which carry out waste treatment operations and waste management schemes, in cases where they infringe the provisions of this Directive.

As a result of over four decades of waste law policymaking, European society has become considerably sensitive to the issue and developed quite relevant measures to prevent and reduce waste production. These results come as a reflection of the development of specific directives for each waste stream, the existence of rigid inspection structures and the direct involvement of the industry in this process, among other things. It is important to mention that the Member States (MS) differ from each other, in a similar way as the Brazilian Federal States. This fact brought the attention of the research beyond the results of the Directives referring to e-waste management, to the variations on the implementation processes of the Member States in the EU – since they vary in stages of economic development, political and legal structures.

In sum, when approaching the waste management topic, one rapidly identifies the complexity of connections on this matter due to the variety of actors and conflicting interests involved. Governments worldwide try to find a way to bring balance to such a complex equation, composed by economy, employment, public health, environment, energy, producers and consumers, by elaborating their regulations on waste. As a result of this challenging feature, countries are in quite different stages of the process of developing clear and effective regulations for treatment and reduction of waste. The focus of this study is, therefore, academically relevant because there is still insufficient knowledge of how legal rules should be created and structured in order to tackle the e-waste problem in a satisfactory manner. Questions to be answered include, among others; which stakeholders to involve and how? which process to focus on? what are the variables and how to cope with them? This lack of knowledge directly impacts innumerable countries, above all, third world countries which have less tradition in law for the environ-

ment. This struggle represents a social relevance of the research as it provides evidence for the need for changes and improvement on the topic.

The Member States of the European Union have considerable experience with regulation, since the EU legal rules on waste originate from the 70's. From an overall perspective and, looking into data from studies and reports of yearly developments, the European process shows positive outcomes. Brazil, on the other hand, faces considerably low improvements – and at some point stagnated progress – in the collection, treatment, and recycling of waste. Taking as reference the EU waste legal framework, this study had as its purpose to identify and understand the elements in the European legislation that lead to failures as well as successful results, and to detect which of those – as well as to what extent – may be transposed and applied to the Brazilian legal framework. In order to perform this path, the research followed an explanatory purpose which, on what concerned the documents, literature and legislation, adopted the method of archival analysis, and, regarding the transposition and implementation in the Member States, chosen for a qualitative mode of case study method.

1.2 Research Questions

Considering the major environmental, social and economic issue that waste production represents for countries worldwide, and the complexity of waste management as a topic involving legal, economic, and technical spheres, this research seeks to access in depth knowledge on the European Directives for Waste Electric and Electronic Equipment and to explain, rather than simply to describe, the phenomena studied.⁶ The Directives represent experience of over a decade, when the first directive was published in 2002. The EU experience includes a long process of different tools in legislation being used in Europe as part of the Action Programmes, and policies such as the circular economy, which is built on the concept of the waste hierarchy of prevention, reduction, reuse, recycling.

The European legislation for waste has developed a model based on the principles of polluter-pays (PPP) and extended producer responsibility (EPR), involving producers to suppliers, traders, consumers and government. The European model on the topic has the potential to offer relevant lessons to the Brazilian process. The Brazilian NPSW has also created a similar legal framework based on the polluter-pays principle, however, instead of focusing on the producer responsibility principle, it concentrates on the shared responsibility of all stakeholders involved in the (W)EEE dynamics. The Brazilian policy law for take-back systems of priority waste streams has been estab-

6. Earl Babbie, *The practice of social research* (International Edition Wadsworth Cengage Learning 2013) 92.

lished under rather broad concepts and instruments. In addition, the actions specified in the NPSW have been specified to depend on the signing of agreements between public sector and industry to set targets, procedures, logistics and costs. Taking an even closer look, those agreements depend on public calls and, therefore, are bound to take long to be established and to enable the whole dynamic of the extended responsibility to start.

Examining the Brazilian regulations and current scenario concerning the management of the electrical and electronic equipment waste stream against the European settings, one main research question naturally arises. This main inquiry, followed by a few sub-questions, has guided this doctoral research.

To what extent can the legal instruments of the WEEE European Directives be transplanted to the Brazilian Legal Order to improve and accelerate the process of regulating e-waste management?

a. Which legal instruments of the WEEE Directives have contributed to reducing the e-waste management problems in the European Member States?

b. Which legal instruments of the WEEE Directives could be transplanted and used as a source of inspiration for Brazilian Law and Policy taking into consideration the current Brazilian Framework for e-waste management?

In order to acquire more insight in the development process of the European Legislation for WEEE, not only the first and recast Directives have been researched, but also the implementation process in a few Member State countries. The purpose has been to identify specific information and nuances of the Directives as they were implemented. In this fashion, the process of regulating e-waste management in a take-back system could be explained in more detail.

By studying the process of elaborating and later implementing the Directives based on EU Commission official reports and communications, Parliamentary documents, studies, drafts and debates leading to the Directives and the national laws that have transposed them, this research seeks to find answers to the questions above. Special attention is given to the multiple actors – producers, distributors, municipalities, consumers and producers – part of this peculiar dynamic as well as to the variations and difficulties during this process in Europe. The intent is to develop realistic recommendations to Brazil.

The scientific relevance of this study reveals itself on the need for deeper knowledge on proper legislation able to tackle the e-waste management problem in a greater speed than its growth rates, and, above all, in an effective way for societies nowadays. This is comprised of understanding the interests involved, studying legal possibilities, instruments and principles, and taking into consideration cultural, geographical and technological differences. In

order to understand the implementation of the instruments and principles incorporated in the WEEE Directives, as the principle of extended producer responsibility and take-back systems, and to prepare recommendations to Brazil, both Brazilian and European regulations on these matters will be studied as well as implementation processes of the countries chosen as case-studies. Nonetheless, prior to studying the aforementioned Directives and the corresponding Brazilian laws it is essential to evaluate the possibility for legal transplants to occur. Following this, if legal transplants are concluded to be possible, one more step is necessary before recommendations to Brazil can be presented. It is necessary for criteria including those relevant aspects to the e-waste management problem to be established. These criteria should be able to help analyse whether the jurisdiction of origin and of destination are sufficiently close for the borrowing process to succeed. The study of the theory of Legal transplants and its concepts, as discussed by Alan Watson and, more recently, by Lawrence Friedman, Pierre Legrand, Helen Xanthaki, and Esin Örüçü is presented at the very beginning of this work in order to provide an adequate foundation. Following on from that, the criteria established by this research and the analysis of the jurisdictions is also included.

1.3 Theoretical Framework

The theoretical approach of this study is based on the theory of legal transplants, chosen as a basis and framework possibility to study the European process of developing legislation for management of electrical waste and electronic equipment and combining – as much as it is possible to do so – two different legal structures: the national Brazilian one and its transnational European equivalent, with national implications considered. In chapter 2 the legal transplants theory is further explained and major authors have their positions described. Also of major relevance are the concepts and principles of environmental law without which it would not be possible to discuss legislation for e-waste management, this is a challenge in the field of environmental protection. These principles are explained more extensively in chapter 3, when the processes of elaborating the First WEEE Directive and recast were performed.

1.4 Research Design

Firstly, it is necessary to study the legal transplants theory in order to identify how the theory can be applied to the research questions in place. In doing so, an understanding the structure of European Union law and how EU Member States are expected to incorporate those laws is crucial. Following this comes an analysis of the drafting processes of the WEEE Directives (the first Directive from 2002 and the Recast Directive from 2012) at the Commission, Council and Parliament.

Once this part of the study is completed, in order to focus on the instruments brought by the Directives, a closer discussion about the transposition and application processes of the Directives will be executed. The choice for examples of MS transposition will seek to bring a more practical and clear view of the policies and legal instruments adopted (and of the reasons leading to variations of the interpretations and therefore implementations of the Directives performed by the MS). Opting for a case studies design, the second part of the research studies the process of national transposition and implementation of the WEEE Directives and how the process contributed to enhancing national regulations tackling the e-waste problem. This part focuses on different conditions and policy choices leading to national peculiarities which resulted into rates of collection and recycling above or below European average. These are relevant to better understand the variations within Europe and, therefore, to consider potential for improvement to Brazil and its diverse Federal States. Using multiple cases will enable the development of recommendations with much wider applicability than the single-case study research design.⁷

Further on in the study, based on the theory of legal transplants, an analysis will seek evidence of the most beneficial instruments of the European legislation and the possibility for their use within the Brazilian legal framework. As a final point, the examination of the Brazilian current status for waste management legislation and end-of-life take back practices (with a focus on WEEE waste stream) will take place in order to provide relevant information on the country and for elaborating recommendations.

1.5 Methods

The methods adopted combine the legal analysis of the development and implementation of specific laws referring to waste electrical electronic equipment in the European Union, and the need for the Brazilian legal framework to develop theirs, possibly borrowing from European elements, both successful and unsuccessful. The study is largely based on archival analysis⁸ of national legislation, official reports from authorised institutions in each of the Member State. Relevant reports published by other recognised institutions were also considered and analysed, especially in the case of Brazilian access to up-to-date and detailed data for separate collection of waste and destination for recovery and recycling is limited due to a fairly recent

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7. Robert K Yin, *Case Study Research: Design and Methods* (SAGE 2014) 20-21, 50, 63-64. Reference to the 'embedded multiple-case designs' which consists of multiple units of analysis. In the case of this research, each of the chosen Member State is a 'case' that is inserted in a 'context' and contains two 'embedded units of analysis' (WEEE 2002/96/EC and WEEE 2012/19/EU).
 8. As time reference to the data and regulations mentioned in this chapter, it is important to mention that this research was developed between October 2013 and June 2016.

concern growing on the topic. The reports were complemented by policy documents of debates and discussions which took place in European institutions, European Commission reports, the Directives themselves, and literature on the topic.

In order to investigate the continuously evolving Waste Electrical and Electronic Equipment legislation in the EU, three countries were chosen for a closer analysis and observation of the implementation of the Directive into national territories. This part of the research focused on objective reports of the MS and of the European Commission (EC) concerning achieved targets of collection and recycling of WEEE in order to verify the WEEE Directives as valid legislation through which to tackle the e-waste problem. The cases were chosen based on official information transmitted by the Member States to the EC. The Member States are the United Kingdom, the Netherlands and France; a special chapter is given on Nordic Countries. The case studies chapters are based on national legislation, official reports and academic articles, and qualitative interviews with representatives of the stakeholders involved, such as government (ministry of environment), producer compliance schemes, and recyclers.

Furthermore, with the purpose of reaching an accurate understanding of the nuances in advances and set-backs in European and national levels of establishing these policies and legislation the research has been complemented by formal and informal talks (interviews, conference discussions, meetings developments). The target audience included researchers, government officers (mostly Ministries of Environment and alike), representatives of producers take back schemes and associations, and representatives of clearing houses (coordinator institution of the take back schemes), EU authorities and experts on the topic.⁹ The type of interview varied from phone, online, and *in loco*. A qualitative interviewing method was adopted by stipulating a general plan of inquiry. The inquiries are related to the developing processes of the WEEE Directives (negotiation stages and political choices) and their respective implementation by the EU Member States. Nonetheless, the interviews were not limited to the planned questions for the sake of enabling extra information to be collected, according to the direction of the conversations.¹⁰

9. Approximately 30 interviews were performed. The initial 12 followed the stipulated plan of inquiry, while the further unfolded from spontaneously from scheduled appointments. Representatives from the following (main) institutions were consulted: ABINEE, ABRALOG, ABRELPE, DG ENVI, Ecologic-France, Eco-systèmes, Elektronikåtervinning, Environment Agency UK, MEDDE/FR, Miljødirektoratet, MMA/BR, MIM/DK, NorTech Oulu, NVMP, Reciclo Metais, Weee NL, and UNU.

10. Earl Babbie (n 6) 346-347.

1.6 Structure

This study is organised into five parts. The first part consists of two chapters. The current chapter introduces the topic chosen as the focus of the study as well as the research approach. Chapter 2 explains the theory of legal transplants which shall be used as the theoretical framework to assist on the analysis of the European legislation in focus and the recommendations for the Brazilian system. The second part explains the current European scenario concerning waste legislation, and develops in-depth research on reports, drafts, registers relating to the process of creation of the WEEE Directives where their principles and provisions are analysed. The progress made so far on the development of safe management of waste in Europe is presented in chapter 3. The studies of the WEEE Directives – from their early stages as a proposal from the Commission – are to be found in chapter 4.

The third part explores the transposition and implementation process of the Directives by elaborating three non-comparative case studies that seek to provide a clearer perspective of the differences – and thus possibilities – of WEEE systems. Chapter 5 studies the British process, more specifically England's. Chapter 6 and chapter 7 examine the Dutch and the French processes, respectively. Chapter 8 briefly explores the best practices of the Nordic countries Finland, Norway and Sweden.

The fourth part investigates the progress on the field of national laws and policies for waste management in Brazil and, more specifically, on e-waste. Chapter 9 introduces an overview of the Brazilian structures and legal framework on the topic of interest. Chapter 10 approaches the developments on the national policy on solid waste e-waste legislation brought by the WEEE Directives and the following national transpositions as well as drawing recommendations for the Brazilian scenario.

The fifth part refers to the conclusions and recommendations of this work. Chapter 11 evaluates the changes brought by the WEEE Directives to the European Union and regarding the instruments identified during this study. Finally, the chapter brings considerations for legal transplant possibilities into the Brazilian framework to achieve more effective recycling and reuse of end-of-life electric and electronic equipment.

Legal Transplants

2.1 Introduction

As explained in the introductory chapter, this dissertation aims at studying the legal instruments that can be found in the European Directives on Waste Electrical and Electronic Equipment. The purpose is to verify if those instruments can be applied to the Brazilian legal system to assist on the setup of a national take-back system for WEEE. But before the study begins, one first question needs to be answered: Is there a real possibility for the process of transferring legal rules and concepts from one legal system to another?

The legal transplants theory has at its core the debate regarding whether legal transplants can even successfully take place. For instance, it is argued by Watson that ‘borrowing is the name of the legal game and is the most prominent means of legal change’¹ as opposed to Legrand’s view that ‘[r]ules are just not what they are represented as being by Watson. And, because of what they effectively are, rules cannot travel. Accordingly, legal transplants are impossible’.² The purpose of this chapter is to introduce the legal transplants approach and to use it to enquire to what extent it is feasible to draw legal lessons from one jurisdiction to another. By answering this, the question whether the possibility of learning from the European model and transferring those lessons to the Brazilian legal system for end-of-life electrical and electronic equipment will also be answered.

Therefore, it is not the focus of this chapter to develop an in-depth study of the debates that the large body of literature on legal transplants entails. Neither is it a discussion of which method is the most appropriate to guide and perform legal transplants in case those are considered to be feasible.³

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11. Alan Watson, *Law in Books, Law in Action and Society* (University of Georgia School of Law 2006) 5.
 12. Pierre Legrand, ‘The Impossibility of ‘Legal Transplants’’ (1997) 4(2) *Maastricht Journal of European and Comparative Law* 114.
 13. See the debate regarding the most appropriate method for any given country to perform legal reforms and legal transplants. Top-down comprehensive plans: Jeffrey Sachs, *The End of Poverty: Economic Possibilities for Our Time* (Penguin 2005); bottom-up approach: William Easterly, *The White Man’s Burden: Why the West’s Efforts to Aid the Rest Have Done So Much Ill and So Little Good* (Penguin 2006); and middle ground based on a growth diagnostics framework identifies the most pressing binding constraints in a particu-

Rather, this chapter will investigate whether the similarities between the jurisdictions of the EU and Brazil are sufficient to warrant the transfer of legal instruments from the European to the South-American continent. The assumption, derived from legal transplants literature, will be that similarities increase the possibility of legal transplants, while differences may be a barrier.

2.2 Legal Scholarship on Legal Transplants

The theory of general comparative law offers a broad scope of arguments that have been presented by scholars seeking to explain the legal transplants phenomenon. Extensive literature exists debating this phenomenon. Words such as ‘borrowing’, ‘transfer’, ‘reception’, ‘imitation’, and ‘legal transposition’ have also been frequently used when addressing this topic as no final and exclusive expression or satisfactory definition has been established.

In a more general concept, the term legal transplants can describe the transfer of laws and institutional structures across physical or cultural borders. Its implementation could range from an imposed procedure to a voluntary one. It could embrace entire legal systems or merely a single legal principle, and integrate similar or even different cultures.⁴ The scholarship has identified different reasons for which laws have been transplanted. Among the most frequently mentioned are ‘borrowing’ of legal rules and/or institutions due to chance or necessity;⁵ economic and political incentives;⁶ efficacy of law;⁷ and prestige or imposition,⁸ to mention a few.

In this theoretical debate, the concept of ‘legal transplants’ implies an analysis of the connection between law and society: whether it is necessary or not for this connection to exist. Within this debate, two major arguments stand out and take opposite directions. The first one⁹ perceives law as a mirror of society. In this view, a legal transplant always involves the transfer of a

lar country at a time: Dani Rodrik, *One Economics, Many Recipes* (Princeton University Press 2007).

14. John Gillespie, *Transplanting Commercial Law Reform: Developing a ‘Rule of Law’ in Vietnam* (Ashgate 2006) 3.
15. Esin Örücü, ‘Critical Comparative Law: Considering Paradoxes for Legal Systems in Transition’ (2000) 4(1) *Electronic Journal of Comparative Law* 4.
16. Frederick Schauer, ‘The Politics and Incentives of Legal Transplantation’ Center for International Development at Harvard University (Working Paper No 44 April 2000) 22.
17. Daniel Berkowitz; Katarina Pistor and Jean-Francois Richard, ‘Economic Development, Legality and the Transplant Effect, Transplantation’ Center for International Development at Harvard University (Working Paper No 39 March 2000) 16.
18. Rodolfo Sacco, ‘Legal Formants: A Dynamic Approach to Comparative Law’ Part I (1991) 39 *American Journal of Comparative Law* 343-401, 398.
19. Represented by Lawrence M. Friedman, preface to the first edition of *A History of American Law* (1973): ‘treats American law (...) not as a kingdom unto itself, not as a set of rules and concepts, not as the province of lawyers alone, but as a mirror of society’, and Charles de Secondat Montesquieu, *De l'esprit des Lois* (1748).

cultural system of which the legal system represents only one component. The second one¹⁰ poses that such a narrow and strict connection between the legal systems, and the political and economic systems, as well as social circumstances, do not exist. In this analysis, law is mostly an autonomous phenomenon. It exists and operates on its own level, and it is independent from other social institutions. It is, above all, the result of the work of lawmakers who are effective in separating laws from the influence of social reality. Thus, lawyers create the possibility for models and legal systems to be imported and used in different social systems.

When Scottish-American legal scholar Alan Watson created the term ‘legal transplants’ in the 1970s he indicated the transfer of a rule or a full system of law from one jurisdiction to another. As maintained by Watson, ‘borrowing is the most fruitful source of legal change’¹¹ and ‘is usually the major factor in legal change’. From the author’s understanding it followed that ‘it is rules – not just statutory rules – institutions, legal concepts, and structures that are borrowed, not the ‘spirit’ of a legal system. Rules, institutions, concepts, and structures might almost be termed tangibles, can easily be reduced to writing, and are accessible.’¹²

Expanding on Alan Watson’s position, Shen Zongling¹³ argues that a legal system as a whole, or a full code, or even all of a branch of law of a country could be transplanted to another country. In this fashion, Roscoe Pound explains that ‘the history of a system of law is largely a history of borrowings of legal materials from other legal systems and of assimilation of materials from outside the law.’¹⁴ Along the same lines, Margit Cohn states:

(...) whether forced upon a system due to international and transnational commitments, voluntarily transplanted or ultimately rejected, consideration of existing foreign frameworks, or at least comparison with them, is part of any modern system’s evolution.¹⁵

Moreover, the scholar Jonathan Wiener¹⁶ stresses that the act of ‘borrowing’ is not a manoeuvre for the lawmaker to avoid the effort of elaborating new

20. Alan Watson represents the main scholar defending this argument.

21. Alan Watson, *Legal Transplants: An Approach to Comparative Law* (Scottish Academic Press 1974) 335.

22. Alan Watson, ‘Legal Transplants and European Private Law’ (2000) 4(4) *Electronic Journal of Comparative Law* 3.

23. Shen Zongling, ‘Legal transplant and Comparative Law’ (1999) 51(4) *Revue Internationale de Droit Comparé* 855.

24. Roscoe Pound, *The Formative Era of American Law* (Little, Brown and Company 1938) 94.

25. M Cohn, ‘Legal Transplant Chronicles: The Evolution of Unreasonableness and Proportionality Review of the Administration in the United Kingdom’ (2010) 58(3) *The American Journal of Comparative Law* 584.

26. Jonathan Wiener, ‘Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law’ (2001) 27(4) *Ecology Law Quarterly* 1320. According to the author, for more complete statements, see for instance, JB Wiener, ‘Global

laws but, on the contrary, it represents a conscious and intentioned attempt to absorb the most appropriate legal ideas from other jurisdictions to address a certain need. Legal transplants are frequently mentioned in the wider process of diffusion of law, which undoubtedly represents a process of legal change in today's age of globalization. As quoted by Helen Xanthaki:

The current trend of legal globalization at the regional and international levels creates fertile ground for transplants from legal systems not only within the region of the country of reception but also further afield. Comparability can and should no longer be synonymous with convenience or familiarity, much less so if this refers to familiarity at random based on experience of the particular members of each drafting team. Policy choices, concepts, terms and legislative solutions can be borrowed from other legal systems, both neighbouring and further afield. The criterion of comparability is now that of functionality.¹⁷

Cited as a modern example of legal transplant, the Turkish legal system was formed in the years 1924 – 1930 based on the reception of foreign laws. In the words of Esin Örüçü:

The various Codes were chosen from what were seen to be 'the best' in their field for various reasons. No single legal system served as the model. The choice was driven in some cases by the perceived prestige of the model, in some by efficiency and in others by chance. Choosing a number of different models may have given the borrowings 'cultural legitimacy' as the desire to modernize and westernize was not beholden to any one dominant culture. It would have been possible to choose Switzerland or Germany and borrow solely from one of these jurisdictions. It was instead the civil law, the law of obligations and civil procedure from Switzerland, commercial law, maritime law and criminal procedure from Germany, criminal law from Italy and administrative law from France that were chosen, translated, adapted and adjusted to solve the social and legal problems of Turkey and to fit together.¹⁸

Following an opposite direction, there is a different view adopted by a different group of scholars. For them, legal transplants are very specific and, thus, unlikely to be possible. They stated that laws do represent their society and its political, economic and social features. Montesquieu defended the argument that laws mirror environmental and social forces in each country and therefore, 'the political and civil laws of each nation (...) must be so peculiar

environmental Regulation: Instrument Choice in Legal Context' (1999) 108 Yale Law Journal 677.

27. Helen Xanthaki, 'Legal Transplants in Legislation: Defusing the Trap' (2008) 57(3) The International and Comparative Law Quarterly 673.

28. Esin Örüçü (n 5) 81.

to the people from whom they are made; it is a very great accident should those of one Nation suit another.¹⁹

In recent times though, taking into account the reality of innumerable real cases of legal transplants, contemporary scholars concede that legal rule transfers do exist but not the transplant of legal cultures or the epistemological underpinning of the legal concepts. Pierre Legrand is known as one of the most representative of these theorists. According to him, an essential element of the 'ruleness' of the rule — that is, its meaning — cannot survive the journey from one legal culture to another. In his opinion, culture provides the necessary framework for giving meaning and sense to laws. Legrand's theory claims that laws resulting from legal transfers could look the same and even be administered by equally configured institutions but once they are implemented by officials with radically different legal mentalities, they are not the same laws. For this reason Legrand defends that transplants are impossible.²⁰

Smits²¹ argues that the concept of legal transplants implies that the legal rule being transplanted is the same in the recipient country as it was in the donor country. However, upon transplantation into another legal system, the legal rules do not remain the same. Rather they change as they are applied with different readings and interpretations in the recipient country. Therefore, one should not consider legal transplants as possible. In the same vein, Friedman argues that the application of law depends on a legal culture, or, in other words, on social attitudes towards the law, attitudes that are considered to be inseparably linked with the traditions of society, with its social structure, with its history.²²

From this overview of the debate on the possibility of legal transplants to occur one would notice that this is most likely an endless discussion. For this reason, as mentioned earlier in this chapter, the intention here is neither to take the discussion any further, nor to develop a final end- conclusive argument to it. Rather, the purpose of this chapter is to present the different views on the phenomenon of transferring legal rules and which spheres are necessarily involved for it to happen or not. Beata Kviatek²³ has recently published

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29. Charles Louis de Secondat Baron de Montesquieu, *De L'Esprit des Loix*, JP Mayer and AP Kerr (eds.) (Gallimard 1970) 74.
 30. Pierre Legrand (n 2) 117.
 31. Jan Smits, 'On successful legal transplants in a future Ius Commune Europaeum' in Esin Örüçü and Andrew Harding (eds.), *Summary Comparative law in the 21st century* (Kluwer Law international 2002) 143. See also Pierre Legrand, 'European legal systems are not converging' (1996) 45(1) *International and Comparative Quarterly* 79.
 32. LM Friedman, *Law and Society: An Introduction* (Prentice-Hall 1977) 168. According to Friedman, legal culture is determinative: 'So defined, it is the legal culture which determines when, why, and where people use law, legal institutions, or legal process; and when they use other institutions, or do nothing. In other words, cultural factors are an essential ingredient in turning a static structure and a static collection of norms into a body of living law.' Ibidem 76.
 33. Beata Kviatek, *Explaining Legal Transplants: Transplantation of EU Law into Central Eastern Europe* (Wolf Legal Publishers 2015).

her thesis presenting an in-depth discussion on this body of literature and its contradictions. The present chapter unpretentiously digests from this remarkable work, and from the work of the other main authors on this topic. Hence, the presentation of the legal transplants debate in this section only elucidates how diverse the understanding towards the use of laws from different legal systems (and possibly different societies) actually can be.

It is the understanding of this research that the reviewed literature presents valid arguments for accepting the possibility for legal transplants, if one drops the requirement that the transplanted rule in the recipient country should remain an exact copy of the rule in the donor country. In other words, one should acknowledge that the transfer of legal content makes sense even though the meaning of the rule is adapted to the legal and social environment of the jurisdiction of destination. The ample support for this hypothesis in the literature makes it a feasible starting point for the present research. Transferring legal instruments and concepts from Europe to Brazil might very well work, if the social environments of both jurisdictions are sufficiently similar. In this sense, at the end of the present research the aim is to suggest legal transfer possibilities that have been analysed as feasible according to local peculiarities. Identifying similar features of both jurisdictions makes it possible to determine whether successful legal transplants can happen. For this reason, the next section will approach features which have been stipulated as relevant to the WEEE management issue. At the same time, an explanation concerning the choice for using the framework of legal transplants as a tool on the process of answering the research question and sub-questions is also included in the following section.

2.3 Criteria for Performing Legal Transplants

The study of the different arguments which seek to define and evaluate the existence of legal transplants has brought forth important insights in conditions that may enhance or impede legal transplants. At the same time, just as the debate of the legal scholarship on legal transplants is a ‘never-ending’ dispute, establishing satisfactory criteria to successfully accomplish legal transplants is equally as challenging. Even though cultural fit, legal demand and ‘tuning’ are reported by the different approaches as the most relevant conditions to perform legal transplants, still, there are differing views on the law and the relationship between law and society result in different accounts of legal transplantation success.²⁴

For purposes of relevance to the WEEE management issue, this work has chosen to adopt the following pre-defined criteria in order to identify minimum compatibilities that need to be fulfilled in order for Brazil to borrow

34. *ibidem* 81.

from the European model in regulating e-waste management with a reasonable chance of success. Reality shows that meeting a minimum set of compatibilities will not ensure the success of a legal transplant. Yet, if those criteria are not fulfilled, successful transplantation is almost certainly impossible. It is not the intent of this study to make an in-depth study of each of the criteria listed below. Rather, the criteria are meant as a tool for identifying similarities between EU and Brazil that are relevant for the analysis of the instruments of the WEEE Directives successfully or unsuccessfully applied in Europe and of the likelihood that they will be successful or unsuccessful in Brazil.

The framework developed and adopted by this research stems from the process of reviewing the literature on the topic. The most influential articles and authors, nonetheless, must be mentioned. Randall Peerenboom²⁵ in 'Toward a methodology for successful legal transplants' develops a preliminary methodological framework for assessing reforms and legal transplants. In his article he considers elements such as level of development, economic system, political system, assessment of key legal institutions, among others. Shaohong Zhuang²⁶ in 'Legal Transplantation in the People's Republic of China: A Response to Alan Watson', added practical considerations when approaching the complexity of legal transplantation, the meaning of 'success' when legal transplantation takes place, and solutions to current problems of legal transplantations. Finally, the 'Worldwide Governance Indicators (WGI) project' reports²⁷ from the World Bank were an essential contribution to reliable data and figures for comparison matters and the development of this research's own framework. These sources of inspiration were crucial for the establishment of the most relevant aspects to be compared between Brazil and European Union in the next sub-sections.

35. Randall Peerenboom, 'Toward a methodology for successful legal transplants' (2013) 1(1) *The Chinese Journal of Comparative Law*.

36. Shaohong Zhuang, 'Legal Transplantation in the People's Republic of China: A Response to Alan Watson' (2005) 1/2 *European Journal of Law Reform*.

37. The Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for 215 economies over the period 1996-2014, for six dimensions of governance: Voice and Accountability; Political Stability and Absence of Violence; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption <www.govindicators.org> accessed 18 March 2016.

2.3.1 Level of Development²⁸

Whether in a federation or a politico-economic union, the larger the differences between States – in terms of economic capacity – the greater the challenges in finding a balance in regulation that is adjusted to all. The wealth distribution across the States is therefore a relevant indicator to be observed between the European and Brazilian jurisdictions. A first indicator for comparison is the level of development of the two jurisdictions. Clearly the European Union is more developed than the Brazilian Federation. Yet both have the same level of issues in controlling waste. More directly relevant is the variation in the level of economic development across the states that make up the union and the federation. When comparing the level of development within the European Union, using the World Bank's Worldwide Governance Indicators,²⁹ it is clear that the variation is large.³⁰ For instance, observing the figures provided by the comparisons made available by the indicators, Germany and Denmark can be placed one extreme and Bulgaria and Romania on the other. The same is true for Brazil. Yet when comparing the two jurisdictions on that variation in economic development, a striking difference between Europe and Brazil is revealed in terms of 'high income' and 'upper middle income countries'.

In Brazil, similarly, once comparing its twenty six states, the results show great disparity. This scenario has been explained as to be a result of the particular economic history of each state. The main Brazilian institution responsible for the providing of data and information about the country – the Brazilian Institute of Geography and Statistics – has reported that between 2010-2013 the participation of the States of Sao Paulo, Rio de Janeiro, Minas Gerais, Rio Grande do Sul, and Paraná represented 66% of the Brazilian Gross Domestic Product (GDP).³¹

By observing those data it is possible to conclude that the development level observed both in the European Member States and the Brazilian Federa-

38. Economies range in development levels. The developed economies are mainly urban and industrialised and have a much higher standard of living than the less developed. The less developed economies are mainly rural and agricultural and have much lower standards of living than the more developed. It follows that the more developed economies have better education, better health care, higher use of human energy, and so forth. A Zimbalist and HJ Sherman, *Comparing Economic Systems – A Political-Economic Approach* (Academic Press 1984) 14-15.

39. See <<http://data.worldbank.org/data-catalog/worldwide-governance-indicators>> accessed 18 March 2016.

40. Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption.

41. IBGE, 'Contas Regionais do Brasil: 2010-2013' (IBGE 2015) 12-13 <<http://loja.ibge.gov.br/contas-regionais-do-brasil-2010-2013.html>> accessed 1 March 2016.

tive Units³² equally face the reality where different levels of income States coexist in the same system. Such a disparity of development level forces any legal rule to consider the differences when aiming for a similar goal to be reached by all – be they Member States or Federal Units. On the other hand, despite the existing internal disparities among (member) States occurring both in Europe and Brazil (proportionally both scenarios live on an unequal distribution of wealth situation), when the number of States figuring in each of the categories – ‘high’, ‘upper middle’, and ‘low income’ – is observed, Brazil and Europe have considerably different compositions. Considering the twenty eight European Member States by February 2016, except for Bulgaria and Romania which are classified as ‘upper middle income’, all others fall in the category ‘high income’. In the case of Brazil, seventeen states and the Federal District (Brasília) can be classified under the category ‘high income’ and are comparable to some of the Member States of the European Union in GDP.³³ The differences in GDP are, therefore, factors of potential difficulty to bear in mind when considering the implementation of the take-back system for WEEE.

2.3.2 Economic System

Economic systems adopted by states across the world are formally classified as: traditional system (aborigines), command system or planned economy (socialism), market economy (laissez-faire era), and mixed economy.³⁴ Nonetheless, when observing the nature of the economic system of Brazil and that of the Member States of the European Union it turns out that they all are capitalist countries adopting mixed economic systems therefore combining elements of the market economy and command economy – and so do most of the world’s nations.

In a mixed economy, many economic decisions are performed in the market by individuals (natural or juridical person). At the same time the government also plays a role in the allocation and distribution of resources. Most of

42. According to The World Bank Brazil is classified as an upper middle income country. Still, taking a deeper look into its states it is possible to identify great differences of income among them. See more at <<http://data.worldbank.org/country/brazil>> and the European Union comprises high income and upper middle income countries <<http://data.worldbank.org/region/EUU>> accessed 16 February 2016.

43. Croatia as Pernambuco; Estonia as Rio Grande do Norte, and Paraíba; Finland as Rio de Janeiro; Hungary as Paraná, and Rio Grande do Sul; Ireland as Minas Gerais; Latvia as Amazonas; Lithuania as Maranhão, Mato Grosso, and Mato Grosso do Sul; Luxembourg as Espírito Santo, and Goiás; Slovakia as Bahia, Ceará, Distrito Federal, Pará, and Santa Catarina; Sweden as São Paulo. ‘Brazilian equivalents map’ by JP, R.LW and DH, ‘Brazil’s closest matches’ The Economist (12 June 2014) <www.economist.com/blogs/graphicdetail/2014/06/comparing-brazilian-states-countries> accessed 29 June 2014.

44. JS Prybyla, *Comparative Economic Systems* (Appleton-Century-Crofts 1969) 9-18.

the economic output is generated by the private sector: industry, trade and provision of services are controlled by it. The state has the role of regulation and supervision of the economy, in addition to meeting priority sectors such as energy, security, education and health, among others.

This is apparent, too, in the area of environmental protection. In the dynamics of the roles and responsibilities of take-back systems for specific waste streams the involvement of the private sector into the new policies and legal rules being drafted is an undeniable step. At the same time, in a mixed economy the private sector and the government share responsibilities and the monitoring of proper enforcement. The struggle to accommodate divergent interests and practices as it will be seen in the next chapters, are of common reality to all states.³⁵

The governance dimension ‘regulatory quality’ of the WGI has here been chosen as an approximate parameter to compare the interaction of national governments and the private sector. As far as Brazil and its Federal States are concerned, the major regulatory agencies are the federal ones. Thus for this indicator the Brazilian States are considered as having a similar behaviour. Taking 2009 and 2012 as reference in the timeline for Brazil and the representative countries in the EU – Bulgaria, Denmark, Germany, and Romania – the following variations can be observed.

Table 2.1 Indicator ‘regulatory quality’ for 2009 and 2012 in the chosen countries

Table Country	Regulatory Quality	
	2009	2012
Brazil	55.0	54.5
Bulgaria	72.7	69.4
Denmark	100.0	97.6
Germany	93.8	91.9
Romania	70.8	68.9

Source: *GWI Regulatory Quality Percentile Rank (RQ.PER.RNK)*³⁶

The figures reveal a remarkable difference of regulatory quality across European Member States. This gap is one of the factors influencing the results on

45. Some of the difficulties involve the fact that take-back systems represent a drastic shift in responsibility and costs, mostly directed to producers, and importers – in some systems, distributors and sellers are also included – of electrical and electronic equipment, once, before, the dynamics was directly from the end-user to separate collection authorities (a service mainly provided by municipalities). Implications on taxation policies and patterns of consumption are other highlights to keep in mind once considering the reflexes into the economy.

46. See <<http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>> accessed 15 June 2014.

compliance levels of the actors involved in the WEEE national system in the members states. It can be observed from the European model of implementing the Directives that Member State's performance in reaching goals and deadlines also has varied. Nonetheless, the EU process of implementing the WEEE Directives has managed to adjust and succeed. In the same direction, it could be considered that Brazil has similar capacity to Bulgaria for example, and although does not score as high as Denmark, it could still be suitable for legal instruments similar to those used in Europe.

2.3.3 Political System

As stated by Andrew Heywood, '(...) in view of the profound political upheavals of the late twentieth century, it would be foolish to suggest that any system of classification can be anything but provisional.'³⁷ In fact, regimes are fluid and so is their classification. Nonetheless, the author presents five regime types that can be identified in today's modern world: Western Polyarchies; New Democracies; East Asian Regimes; Islamic Regimes; and Military Regimes.³⁸

The western polyarchies (including Western Europe) can be interpreted as a broad equivalent to regimes categorised as 'liberal democracies' or, simply, 'democracies', products of the first two 'waves' of democratization.³⁹ According to Huntington, there has been a third wave of democratization that created liberal democracies such as Greece, Portugal, Spain⁴⁰ – and Brazil. Even though influenced by different waves of democratization, it is possible to identify the same base of a democratic political system among European Member States, and in an analogous manner, between Europe and Brazil. This means that the concepts of political institutions, legislature, administrative agencies, courts, political participation, among other things, even though might vary in the details of its local implementation are similar in Europe and Brazil. The indicators 'rule of law' and 'control of corruption' from the World Bank assist in comparing the performance of democratic institutions in national states worldwide.

47. Andrew Heywood, *Politics* (Palgrave Macmillan 2002) 32.

48. *ibidem* 25-40.

49. Samuel P Huntington, 'Democracy's Third Wave' (1991) 2(2) *Journal of Democracy* 17-20.

50. European Member States that experienced dictatorships in the late twentieth century.

Table 2.2 Indicators ‘rule of law’ and ‘control of corruption’ for 2009 and 2012 in the chosen countries

Country	Rule of Law		Control of Corruption	
	2009	2012	2009	2012
Brazil	48.8	51.7	55.5	56.0
Bulgaria	53.1	51.2	51.2	52.2
Denmark	98.6	98.1	100.0	100.0
Germany	92.9	91.9	92.8	93.8
Romania	55.5	55.9	50.7	50.7

Sources: *GWJ Rule of Law Percentile Rank (RL.PER.RNK)* and *GWJ Control of Corruption Percentile Rank (CC.PER.RNK)*⁴¹

The rule of law captures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Once again, the diversity among Member States and the Brazilian position similar to the upper middle income countries (Bulgaria and Romania) are visible. When observing the Member States composing the European Union and their ranking by the Worldwide Governance Indicators it becomes visible that in one major system equivalent institutions can present different levels of success once the regional context is taken into consideration. Courts, prosecutors, police, administrative agencies, among others.

There are also different scenarios once the Brazilian Federal states are observed. Data from the Justice Performance Index⁴² and the Yearbook of Brazilian Public Safety⁴³ help understand the existing differences of the Brazilian states with respect to the rule of law. In the ranking Justice Performance, the courts in Rio Grande do Sul, Goiás e Amazonas presented the best results (55.8, 55.0, 54.8 out of 100), while the ones in the states of as Roraima, Bahia, and Piauí had the lowest performance (41.2, 38.5, 33.9). For the likelihood of crime and violence occurring, the states of Bahia, Rio de Janeiro, and São Paulo score the highest (5.663, 4.610, 4293 absolute number of occurrences/2014), and the states of Roraima, Mato Grosso do Sul, and Distrito Federal (72, 593, 688) represent the smallest figures.

51. See <<http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>> accessed 8 March 2014.

52. Instituto Brasileiro de Direito Público, *Índice de Desempenho da Justiça – IDJus* (CPJus 2013). <<http://cpjus.idp.edu.br/resultados/resultados-2013/idjus-justica-estadual-2013/>> accessed 9 February 2014. Like other synthetic indicators, IDJus ranges between 0 and 100, and the more developed and efficient the judiciary the closer to 100 will the indicator be.

53. Fórum Brasileiro de Segurança Pública, *Anuário Brasileiro de Segurança Pública* (Fórum Brasileiro de Segurança Pública 2015).

The performance of the different Brazilian states concerning transparency matters and public trust has been analysed by Ethos Institute in 2012. The criteria of transparency of public budget administration, transparency of state procurement of works and services, and the quality level of internal control evidence the existence of states more susceptible to corruption (i.e. Amapá, Minas Gerais, and Piauí), and, in turn, states less susceptible (i.e. Acre, Alagoas, and Ceará).⁴⁴

2.3.4 Legal System

The Brazilian legal system, and therefore its federal states, with its origins in the Roman law, is civil in nature. In turn, European Member States differ when it comes to national choices for legal systems. Indeed, according to William Tetley, ‘(...) the European Union, has brought together many legal systems under a single legislature, which in turn has adopted laws and directives taking precedence over national laws. In effect, the European Union is a mixed jurisdiction or is becoming a mixed jurisdiction (...)’.⁴⁵ Although such diversity was not an obstacle to their national processes of implementation of the European Directives, as much as possible, most of the Member States that have been chosen for the study cases of this research have legal system that follow civil law (as opposed to common law). It is worth noting that while this research has considered the nature of the legal system as a relevant criterion, this was not the only one that was taken into account. The first reason is the fact that civil law and common law systems can learn from and influence one another⁴⁶ (therefore the nature of the legal systems considered should not be an impediment to this study). The second reason lies in the fact that certain aspects, which are specific to the Member States chosen for the case studies, have justified the need for a deeper look into their specific experiences (as the case of Norway and the UK).

It is no secret that, unlike the EU, Brazil is one single nation. Even so, it is important to remember that the country’s form of State is organised under the Federative model. The federative structure presents quite significant similarities to the process of implementation of European Directives into the legal structure of EU’s Member States when the field of law and legal transposi-

54. Instituto Ethos, *Sistemas de Integridade nos Estados Brasileiros* (Instituto Ethos 2012) 9-30.

55. W Tetley, ‘Mixed jurisdictions: common law vs civil law (codified and uncoded) (Part I)’ (1999) 4(3) *Uniform Law Review* 591.

56. A proof of the validity of this statement is the existence of mixed jurisdictions, being the European Union one of its most remarkable examples. Definition of mixed jurisdiction: ‘What I describe by the use of this term in relation to modern Scotland is a legal system which, to an extensive degree, exhibits characteristics of both the civilian and the English common law traditions’. R Evans-Jones, ‘Receptions of Law, Mixed Legal Systems and the Myth of the Genius of Scots Private Law’ (1998) 114 *L.Q.R.* 228. See also Tetley (n 45).

tions are considered. These resemblances are helpful to identify the particularities embedded in the process of drafting legal instruments to work as guidelines to States (whether federal or Member States) and their own national/regional particularities and difficulties.

As in the EU, the Brazilian States have independence to enact their own laws, although, once a higher (federal) law is published on the same topic they must implement the instructions defined by the central government and may not provide different provisions.⁴⁷ They can, however, decide to prepare State laws that are more far-reaching (as long as those do not contradict the federal law). This is similar to the dynamics in the EU and the practice of the Directives and their implementation by the Member States.

Another similarity between the Europe and Brazil concerning State Laws and higher level legislation requiring implementation by the states can be found when looking at the example of specific legislation for waste management in Brazil and the WEEE Directive in Europe. Further in the chapters about the Brazilian structure it will be discussed that a few Federal States had already developed laws for waste management long before the federal law – the National Policy on solid Waste – had come out, and simply had to adjust their laws. On the other side, other States had not yet approached this topic until the federal law was enacted. As a consequence, they had to implement the provisions and create the system from scratch, a process that took longer and required greater efforts if compared with the States that had already started with their own legislation. A similar observation can be made from the WEEE Directive 2002/96/EC and its implementation process in the different Member States.⁴⁸

The learning process of levels of legislation, implementation, and coordination of an environmental public policy are relevant from the European model to contribute, in this one more aspect, to optimize the Brazilian experience which is only beginning its first steps in this very same path.

2.3.5 Key Public Institutions

To assess the performance of key public institutions the World Bank indicator ‘government effectiveness’ was chosen for this section. By government effectiveness it is understood that perceptions towards the quality of the civil service and the degree of its independence from political pressures, the quality of public services, the quality of policy formulation and implementation and the credibility of the government’s commitment to such policies have been captured.

57. The Brazilian Federation and Legal Framework will be explained in details in chapter 9.

58. The implementation processes of the WEEE Directive 2002/96/EC and Recast WEEE Directive 2012/19/EU will be further explained in this book.

Table 2.3 Indicator ‘government effectiveness’ for 2009 and 2012 in the chosen countries

Country	Government Effectiveness	
	2009	2012
Brazil	51.2	50.2
Bulgaria	59.8	60.3
Denmark	99.0	99.0
Germany	92.3	93.3
Romania	44.5	43.5

Source: *GI Government Effectiveness Percentile Rank (GE.PER.RNK)*⁴⁹

Observing the European countries listed above, once again, the discrepancies within the European Union are evident: on one side countries such as Germany and Denmark nearly reach maximum level of government effectiveness, and on the other, countries like Bulgaria and Romania struggle to reach levels higher than fifty out of a hundred. At the same time, if the Brazilian states are considered altogether, Brazil can be compared to the performance level of some members of the European Union. However, in this case, it is also relevant to observe the Brazilian states individually.

The assessment of strengths and weaknesses of key legal institutions in the Brazilian states has been observed from certain criteria that have been made available by the 2012 Ethos Institute report. The criteria of independence of courts of auditors, space for the opposition in legislative assemblies, and performance of parliamentary committees of inquiry to investigate irregularities present the states of Pará, Piauí, and Santa Catarina as examples of having less success regarding those topics and the states of Espírito Santo, Paraná, and Rio Grande do Norte as having the best performance.⁵⁰ Despite the fact that effectiveness of key public institutions varies according to regional features, still their structures are based in the same framework, aiming at the same goals, and are expected to reach the same minimal standard. The transposition and implementation of the WEEE Directive in all Member States has been completed. As it is discussed further in the chapters, the time schedule for this achievement varied in time and in level of success also influenced by what the variables that this indicator rule of law entails.

59. See <<http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>> accessed 8 March 2014.

60. Instituto Ethos (n 44) 31-48.

2.3.6 Civil Society and Media

The success of a public policy is largely dependent on the effective response of civil society. However, the capacity of civil society is reliant on investments in learning and adaptation so that actions based on critical consciousness and mobilisation of the active segments become possible.⁵¹ ‘Voice and accountability’ is the World Bank’s indicator that captures perceptions of among others, the extent to which a country’s citizens have freedom of expression, freedom of association, and a free media. This indicator has been chosen to provide parameters to compare the following countries.

Table 2.4 Indicator ‘voice and accountability’ for 2009 and 2012 in the chosen countries

Country	Voice and Accountability	
	2009	2012
Brazil	61.6	61.6
Bulgaria	64.9	59.2
Denmark	98.6	99.1
Germany	92.3	93.3
Romania	60.7	57.8

Source: *GWI Voice and Accountability Percentile Rank (VA.PER.RNK)*⁵²

As it has been the case with some other indicators, the European Member States here compared present considerably different figures. It is interesting to note that despite those differences in ‘voice and accountability’ levels, when presenting lower levels, Member States still managed to establish a take-back system for WEEE according to the premises of the Directives. Equally to previous sections, the Brazilian federal states – measured as the Brazilian federation – score in similar figures to some of the European Member States. This leads to an understanding towards the possibility of success of the legal transplants considered in this research.

Although the Brazilian tradition on such topics is more recent than the one in most of the European Member States, since its return to democracy in 1985, influenced by international guidelines, Brazil follows similar directions to western countries. By developing legislation to protect and promote democratic participation, Brazil defends the international standards for media and non-governmental organisations assessment. At the same time the access to

61. GK Thampi and S Balakrishnan, ‘Public Policy & Civil Society: Ambiguities and Possibilities’ Public Affairs Center Bangalore (2002) 4 <<http://pafglobal.org/about-us/publications/civil%20society.pdf>> accessed 16 March 2016.

62. See <<http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators>> accessed 16 March 2014.

governmental information and the possibility for civil society to participate in the law making process are legally guaranteed.

The ‘Transparency Portal’⁵³ is available for public access of all citizens concerning information on the application of federal resources collected. The figures and documents relating to programmes and government actions that are made available in this portal are obtained from millions of data and consolidated from various Federal Government agencies. The ‘Public Transparency pages’⁵⁴ give continuity to government action to increase the transparency of management and social control, and complement the information available on the Transparency Portal. Further, there are the ‘Access to Information Pages’⁵⁵ that are the responsibility of the public entity itself who may, according to its discretion, enter other information it deems relevant.⁵⁶

Respective to civil society and media space, and participation in the Brazilian states, the criteria civil society participation in public management boards and impartiality of the local media in the monitoring of corruption cases in the States are based on Ethos Institute report of 2012. The states further from an ideal scenario were identified as Alagoas, Bahia, and Rio Grande do Norte. In turn, states closer to an ideal scenario were pointed out to be Rio de Janeiro, São Paulo and Paraná.⁵⁷

2.3.7 Population and Regional Diversity

Aspects about population and regions within a state, and specially the diversity between them once compared to one another, those all play a relevant role in implementation of public policies. The main reason is the fact that the participation of civil society not only at the creation process of public policies but also – and as importantly – at its implementation process impact directly in the capacity for that state to reach its targets and achieve its deadlines. The process is no different to the implementation of the WEEE Directives. It will be discussed in the following chapters that distances from collection points, as well as geographical difficulties to reach them do influence the behaviour

63. *Portal da Transparência* <www.portaldatransparencia.gov.br> accessed 18 January 2016.

64. *Páginas de Transparência Pública* <<http://www3.transparencia.gov.br/TransparenciaPublica/>> accessed 18 January 2016.

65. *Páginas de Acesso à Informação*. Several different links, as each public entity is entitled to have their own website.

66. Through Presidential Decree No 5482 of 30.05.2005, the Federal Government established the disclosure on the Internet of information on budgetary and financial execution of the organs and entities of the Federal Public Administration, direct and indirect. The Ministerial Decree No 140 of 16 March 2006, which governs the matter, states that the aforementioned bodies and agencies should keep their electronic sites on the Internet page called ‘Public Transparency’, with the minimum content information on the budget execution and financial bids, contracts, agreements and costs of travel and per diem that occur in their respective fields. In turn, the ‘Access to Information Pages’ are required by the Access to Information Act - LAI (Law No 12.527 of 18/11/2011).

67. Instituto Ethos (n 44) 49-60.

of end-users. Differences between urban and rural areas are also noticeable on this topic given the fact that urban areas in most of the world concentrate greater amounts of population and, in consequence, much greater amounts of WEEE being disposed of on a daily basis.

For this indicator the choice for the Urban World Population Map has been made. The map is an updated version (as of October 2011) from the United Nations Department of Economic and Social Affairs (UNDESA) estimates of urban population that was included in UNICEF's report of 2012.⁵⁸ From observing this map it is possible to identify the figures referring to the countries chosen as representative of the extremes of the EU and Brazil.

Table 2.5 Percentage of 'urban population' in 2010 in the chosen countries

Country	Urban Population 2010	
	Percentage	Absolute numbers
Brazil	87%	169M
Bulgaria	71%	5M
Denmark	87%	5M
Germany	74%	61M
Romania	57%	12M

Source: UNICEF Urban population map⁵⁹

The Brazilian states are significantly distinct from each other in terms of population, whether considered its figures or diversity, as much as they differ in economic development. The same can be asserted when Member States of the EU are compared. Regional differences have offered varying conditions for its population, which has developed into a more urban or rural society. At the same time when urban areas are considered richer, they also present greater figures of inequality, and a variable usually adding to the formula – which is relevant for this study – is the education factor. Good quality education, that includes environmental awareness, is a strong instrument that still today lack in many States.

As mentioned above, the issues related to lack of involvement from the local population in returning their WEEE to integrate the take-back system is directly connected to culture of recycling, and, therefore, public engagement and instruction of society. The culture of recycling faced in Brazil are, interestingly, considerably similar to the ones that the European Union has al-

68. UNICEF, 'The State of the World's Children 2012: children in urban world' (UNICEF 2012) Urban Population Map <www.unicef.org/sowc2012/urbanmap/> accessed 11 March 2014.

69. *ibidem* iv.

ready faced, such as the cultural trace that consumers of electrical and electronic equipment often hold on to their products even after they have become obsolete. This behaviour results not only from rapid technological developments, but also from data protection concerns, how conveniently located the collection points were established, and how likely the population is to participate.

2.4 Concluding Remarks

This study has chosen for one specific topic within the environmental law, which is legal regulation of electrical and electronic waste management. The topic affects public policies for the environment, health, and industry. At the same time, it impacts public and private sector, due to the roles and responsibilities specified for the players who take part within the dynamic: producers, importers, and distributors of electrical and electronic equipment, as well as consumers and government.

From the body of literature on legal transplants, one can infer that the success of a transfer is not just dependent on the legal content printed on paper. Rather, success is closely linked to a group of features including economic, cultural and political similarities. It is worth noting, therefore, that the factors that will contribute to a successful borrowing of legal rules and concepts are not merely cultural. The degree of relevance of each of the factors considered in this group will vary as much as the conditions and the characteristics of the donor and the host vary. Transplantation involves a process of adaptations in the host structure in order to facilitate adjustments and fitting. The more this process is embraced, the more likely the transplantation is to succeed. Moreover, the implementation of a particular legal transplant seems feasible if it is entitled to political legitimacy – that is, if the hosting society perceives the new model as the most appropriate. Otherwise, history has shown that legal transplants imposed by force are reversible: for as soon as there is a change in the balance of power its effect is bound to cease. One should not confuse the subsequent development in the host system with rejection. As pointed out by Watson, ‘a successful legal transplant – like that of a human organ – will grow in this new body, and become part of that body just as the rule or institution would have continued to develop in its parent system.’⁶⁰

The comparison of the providing jurisdiction and the receiving jurisdiction, applying selected criteria, was meant to enable the identification of differences and similarities that will be taken in to consideration in order to perform recommendations in the final part of the work. If the content is ap-

70. Alan Watson, *Legal Transplants: An Approach to Comparative Law* (Scottish Academic Press 1974) 27.

propiate and minimally suitable for adaptation and if it poses the likelihood of success, while allowing for differences in legal culture and systems, it will be considered, in terms of this research, as a valid choice for improving the Brazilian legal system. The feasibility of transplants is relatively plausible in environmental matters – the area of the present study – since they are global issues and therefore it is more likely to identify similarities in the legal frameworks addressing them. An example in case is ‘The Framework Convention on Climate Change’, adopted in Rio de Janeiro in 1992, and the Kyoto Protocol, negotiated in 1997, which borrowed two fundamental regulatory precepts from national law of the United States, Canada and New Zealand: integration (comprehensive scope) and incentives (market-based emissions trading).

Another aspect to be considered is the willingness of a state to promote reforms, which, as argued by Watson,⁶¹ directly influences how successful legal transpositions will be: a factor called ‘receptivity of a state’. As it can be observed from the text of the European WEEE Directives and the Brazilian Policy Law on Solid Residues, both explain the intent of improving human health and environmental protection by regulating e-waste management.⁶² In the chapters discussing the Brazilian Federal Law the motivation and willingness of the State for these legal reforms becomes evident. This can be observed from the reasoning of the National Policy on Solid Residues, or from the struggles for a national sectoral agreement for the set-up of a WEEE take-back system to be reached.

One of the key lessons learned from the countless legal transplants attempts in history is that rather than simply focusing on the supply side of reforms one has to pay thorough attention to the demand side. In the same spirit as Peerenboom, and making use of one of the currently popular slogans, reforms must be country-owned and country-led. Foreign actors may provide a general framework for development and legal reforms; yet, for reforms to be successfully implemented, they must fit the local circumstances and respond to the real needs of the target country. Thus, an important factor influencing the success of transplants is the level of involvement, action and interest of domestic actors.⁶³

In determining the success or failure of transplants, one should take considerable time before making assessments. As discussed by Zhuang about the

71. Alan Watson, ‘Comparative Law and Legal Change’ (1978) 37(2) *The Cambridge Law Journal* 315.

72. See Directive 2002/96/EC, recitals: (1) The objectives of the Community's environment policy are, in particular, to preserve, protect and improve the quality of the environment, protect human health and utilize natural resources prudently and rationally. [...]. See Policy Law 12.305/10, Article 7 - The objectives of the National Policy on Solid Residues are: I - protection of public health and environmental quality; [...].

73. Randall Peerenboom, ‘Toward a methodology for successful legal transplants’ (2013) 1(1) *The Chinese Journal of Comparative Law* 12.

solutions to current problems of legal transplantation '[i]t will take some time to be able to assess the result of legal transplantation. The goals of legal transplantation set by the country of adoption should be reasonable, because there would be the same laws or institutions, implemented in the same way, but they could not possibly have the same domestic resources as the donor country.'⁶⁴

Finally, a legal transplantation is not possible without efficient legal professionals, skilled and trained in the new model. At this point, law schools are particularly important in providing operatives such as lawyers, judges, notaries and other judicial officials.

74. Shaohong Zhuang, 'Legal Transplantation in the People's Republic of China: A Response to Alan Watson' (2005) 1/2 *European Journal of Law Reform* 232.

PART II

European Union: Environmental Law and the WEEE Directives

European Environmental Law and Policies on Waste

3.1 Introduction

In 1987, when the United Nations World Commission on Environment and Development released the report 'Our Common Future',⁷⁵ economic, social and environmentally sustainable development was officially identified as a major challenge to be pursued and achieved worldwide. The report is also known to have introduced one of the most accepted definitions for the concept of Sustainable Development: a 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.⁷⁶ Yet, in the European Union, the concern for an environmental policy for the rapidly developing society was established even before 1987. The European awareness towards the impact of modern society on its health and surrounding environment has been clearly registered in the First Environmental Action Programme adopted in July 1973. Tackling the waste management issue was soon recognised as representing a great share of the environmental policy's success for the European countries, which led to the coming into force of the Waste Framework Directive in 1975⁷⁷ for addressing the matters related to waste production, prevention and management. Since then, the European environmental policy has been continuously improved.

The European legal framework on waste, a means for structuring legal provisions on the waste matter into actions, consists of instruments elaborated upon according to different levels of compromise expected from the Member States, such as regulations, directives, decisions, recommendations and opinions. The Waste Framework Directive⁷⁸ represents the main legislative instrument defining the EU waste principles and introducing basic policy instruments to implement such principles. It aims at protecting the environ-

75. Usually referred as the 'Brundtland Report' as homage to the chairperson of the commission at the time, the Prime Minister of Norway, Gro Harlem Brundtland.

76. World Commission on Environment and Development, 'Towards Sustainable Development' in *Our Common Future* (Oxford University Press 1987).

77. Council Directive 75/442/EEC on waste [1975] OJ L 194. It was considerably amended in 1991 (Directive 91/156/EEC), in 2006, reaching its most recent revised version in 2008.

78. Directive 2008/98/EC on waste and repealing certain directives [2008] OJ L312/3 (Waste Framework Directive).

ment and human health through the prevention of the harmful effects of waste generation and waste management. Since 1975, the Directive has been amended and revised in order to achieve efficiency and reflect the most recent issues related to waste management. An important influence to this process has been the European Commission's strategy during the 1990s to achieve proper waste management policies, and when the concept of a waste hierarchy was introduced. The hierarchy established the disposal of waste in landfills as a choice to be avoided and only be adopted once all treatments had been considered.

Influenced by 30 years of evolution on the European environmental law and policy, the current revised Waste Framework Directive from 2008 defines a set of rules for the proper management of waste in the EU, aiming at the reduction of the environmental impact of waste, and encouraging resource efficiency through reuse, recycling and recovery. In order to effectively apply the rules, the Directive brought the concepts of 'waste hierarchy', 'the Polluter Pays Principle (PPP)', 'waste streams' and 'the Extended Producer Responsibility' as well as set basic definitions related to waste management: definition of waste, recycling, reuse, and recovery. According to the current Waste Framework Directive, 'waste means any substance or object which the holder discards or intends or is required to discard'. The definitions to some extent provided more clarity on when waste should no longer be considered as such but as a secondary raw material (the so-called 'end-of-waste criteria'), and how should the distinction between waste and by-products be accomplished. In sum, through specific definitions, procedures, and goals, the Directive established a legal framework for the treatment of waste within the European Union.

As a result of the new concepts and procedures brought by the Directive, the waste laws and policy of the EU Member States started to apply the following five-step waste management hierarchy⁷⁹ introduced by the Directive as a priority order, where prevention should be the main objective, followed by reuse, recycling and other forms of recovery. In this hierarchy, disposal is strictly considered as the last resort.⁸⁰ It is worth noting that the concept of waste hierarchy was first introduced by the Waste Framework Directive unanimously and became the foundation of all the subsequent waste Directives. The reason was the definition of waste prevention as the most favourable option for dealing with waste production among the possible stages in the

79. Directive 2008/98/EC (31) 'the waste hierarchy generally lays down a priority order of what constitutes the best overall environmental option in waste legislation and policy, while departing from such hierarchy may be necessary for specific waste streams when justified for reasons of, inter alia, technical feasibility, economic viability and environmental protection.'

80. N Tojo and C Fischer, 'Europe as a Recycling Society-The European Recycling Map' working paper 5/2010 (figure 1) (ETC/SPC 2010) 7
<<http://scp.eionet.europa.eu/publications/>> accessed 19 February 2014.

waste hierarchy. Only when prevention would not be possible, should material reuse, energy recovery, and disposal be considered, in that order. In the years to come, combined with the concept of waste hierarchy, the principles brought by the consolidated version of the Treaty on the Functioning of the European Union – TFEU (‘The Treaty’) Article 191⁸¹ were an essential contribution, which became the guiding principles of the European environmental policy and, consequently, of EU environmental and waste law.

3.2 Principles of EU Environmental Policy

The principles listed in this section comprise not only the ones expressed in Article 191(2) TFEU – Union policy on the environment – but as well the ones adopted by the European Environmental Policy with regard to the waste management issue. The first group of principles is the ones set out in Article 191(2) TFEU as supporting the objectives of European Environmental Policy. The second group of principles is represented, although occasionally indirectly, within the European Waste Policy.

3.2.1 General Guiding Principles

Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.⁸²

i. High Level of Protection

Article 191(2) of the Treaty begins by stating the aim for the Union’s policy on the environment, described as a high level of protection that takes into account the diversity of situations in the various regions of the Union. As explained by Jans and Vedder, the principle is one of the most important substantive principles of European environmental policy being specified in different places in the Treaties. The Treaty of Amsterdam accomplished the inclusion of the principle in the general objectives of the EC Treaty under article 2, where it was a task to promote ‘a high level of protection improvement of the quality of the environment’. However, Jans and Vedder remind that the origin of the principle as being in the ‘old’ article 100a(3) EEC, included in the Treaty by the Single European Act. Examples of legislation

81. TFEU, Article 191, Official Journal of the European Union Volume 55 Information and Notices 26 October 2012.

82. *ibidem* Article 191(2).

referring to this principle include Regulation 13/2006 on shipments of waste⁸³ and the IPPC Directive,⁸⁴ whose aim is to reach integrated prevention and control of pollution so that a high level of protection of the environment is considered as a whole.⁸⁵

ii. *The Precautionary Principle*

The principle of precaution aims to ensure a higher level of environmental protection through preventive decision-making in the case of risk and, therefore, justifies environmental measures to be taken prior to a risk materialising. Since science may not always provide conclusive answers about the safety of certain procedures, this principle deters potentially harmful interventions in the environment by defending that it is better to act before it is too late rather than waiting for full scientific evidence to be available. Consequently, in some cases, the precautionary principle may justify that actions to prevent damage are taken even if a clear link based on scientific evidence was not established. The guidelines of the Commission explain the precautionary principle as being about ‘risk-management’, which different from the understanding that all risks must cease to exist. The task of defining society’s acceptable risk level for the environment varies according to policy options. Nonetheless, it is expected that measures based on the precautionary principle are proportional to the chosen level of protection; non-discriminatory in their application; consistent with similar measures previously taken – based on awareness of potential benefits and costs (of action or lack of action) – and, still, are available for review in view of new scientific data.⁸⁶

iii. *The Prevention Principle*

The principle of preventive action was included in the Treaty by the Single European Act⁸⁷ (SEA) in 1987, which introduced a new ‘Environment Title’. The prevention principle seeks to regulate and control in order to avoid environmental harm, by taking actions before there are environmental damages, as to repair damage after the event is environmentally – and often economically – less satisfactory than preventing it. The preventive principle has been

83. Council Regulation (EC) 1013/2006 on shipments of waste [2006] OJ L190/1.

84. Council Directive 2008/1/EC concerning integrated pollution prevention and control [2008] OJ L24/18.

85. Jan H Jans and Hans HB Vedder, *European environmental law: after Lisbon* (Europa Law Publishing 2012) 41-43.

86. *ibidem* 43-44.

87. SEA revised the Treaties of Rome to add a new momentum to European integration and complete the internal market. It amended rules governing the operation of the European institutions and expanded Community powers, notably in the field of research and development, the environment and common foreign policy. OJ 1987 L169/1.

adopted by the European environmental policy since the European Community's First Environment Action Programme on the subject, in 1973. Published in a Commission Communication in 1989,⁸⁸ the Community strategy for waste management, this principle was established to avoid and reduce the quantity and harmfulness of waste as a matter of priority in the European waste policy. The Third Action Programme on the Environment⁸⁹ brought a strong focus on the prevention principle when prevention, rather than cure, was included as a central theme. Also applied by the waste hierarchy, the waste prevention fosters the idea of reducing the amount of waste generated at the source, as well as its hazardous content, in order to simplify recycling and disposal. In that sense, waste prevention is directly associated with both improving manufacturing methods and influencing consumers to demand greener products and less packaging.

iv. *The Source Principle*

This principle requires that pollution is dealt with at the source, in order to avoid environmental damages, which are potentially costly or difficult to repair. Within the same logic of the preventive principle, this principle rests on the recognition that dealing with issues as soon as they arise – at the source – constitutes the most effective and efficient method. 'According to the source principle, damage to the environment should preferably not be prevented by using end-of-pipe technology. This principle also implies a preference for emission standards rather than environmental quality standards'.⁹⁰ An interesting case where the principle was given an unexpected dimension was the *Walloon Waste* case.⁹¹ In this case, the Court of Justice applied the principle by analysing to what extent Walloon measures restricting imports of foreign waste were discriminatory. From the principle, the Court understood that each local authority must take the necessary actions to ensure the reception, processing and removal of its own waste. The disposal of waste must be as close possible to the place of production so that transport is limited. As a consequence, in view of the differences between the waste produced at various locations and the connection with the place of its production, the Court held that the Walloon restrictions were not discriminatory. As

88. European Commission, Communication to the Council and to Parliament on a Community strategy for waste management 18 September 1989 SEC (89) 934 final.

89. Council of the European Communities and Representatives of the Governments of the Member States, Resolution on the continuation and implementation of a European Community policy and action programme on the environment (1982 to 1986) [1983] OJ 1983 C46/1.

90. Jans and Vedder (n 85) 48.

91. Case C-2/90 *Commission v. Belgium* [1992] ECR I-4431.

explained by Jans and Vedder, in this case, ‘the source principle was thus equated with what is known as the “proximity principle” in waste law.’⁹²

v. *The Polluter Pays Principle*

The principle in question places the responsibility for the polluter to bear the costs of pollution caused by his actions. It is closely connected to the Proximity and Self-Sufficiency principles. Even before a European environment policy was incorporated into the Treaty the polluter pays principle was already its base: the principle has been referred to since the First Action Programme on the Environment⁹³ (1973). Included in a Communication from the Commission to the Council as part of a Council Recommendation to MS in 1975⁹⁴ the principle approached the topic of cost allocation and action by public authorities when environmental matters were concerned. When applied to the waste management issue, it means that treatment and disposal are not the responsibility of the taxpayer, but of the producer/generator of such waste. Basically present in all the European Treaties, it refers to a concept of responsibility – the responsibility to bear the consequences, in terms of costs, of pollution which one has caused or a type of waste produced, including the costs of compensation for damages.⁹⁵

3.2.2 Principles and concepts in European Waste Law

As mentioned above, other principles and concepts than the ones in Article 191(2) TFEU are clearly guiding the instructions presented by the Waste Framework Directive and specific waste stream directives issued since the nineties and the European Union's approach on waste management as a whole. The Waste Framework Directive,⁹⁶ of major relevance to the European Waste Law, comprises the general rules applicable to all waste categories. Hereafter, deriving from the overarching principles of the Treaty, and complementing the European legal framework for waste, the central principles and concepts of European Waste Law are briefly explained.⁹⁷

92. Jans and Vedder (n 85) 48-49.

93. Council of the European Communities and Representatives of the Governments of the Member States, Declaration on the programme of action of the European Communities on the environment [1973] OJ C112/1 (First Environment Action Programme).

94. European Council Recommendation 75/436 [1975] OJ L194/1.

95. Jean-Pierre Hannequart, *European Waste Law*. International Environmental Law and Policy Series (Kluwer Law International 1998) 55.

96. Waste Framework Directive OJ 2008 L312/3 repealing Directive 2006/12 OJ 2006 L114/9, and Directive 75/442 OJ 1975 L194/47 (as amended by Directive 91/156 OJ 1991 L78/32).

97. See European Commission, ‘Waste’ (DG Environment) <<http://ec.europa.eu/environment/waste/index.htm>> accessed 15 April 2014.

i. *The Principle of Extended Producer Responsibility*⁹⁸

The Waste Framework Directive regulates the environmental policy principle of ‘extended producer responsibility’ (Article 8). One of the pillars of the waste directives, this principle places responsibility with the producer for the impact of his products.

Art. 8(1) In order to strengthen the re-use and the prevention, recycling and other recovery of waste, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility.

Art. 14(1) In accordance with the polluter-pays principle, the costs of waste management shall be borne by the original waste producer or by the current or previous waste holders.⁹⁹

In sum, according to this principle, producers are financially responsible for the entire life cycle of all products and packaging that they produce, including when those become waste. In fact, this concept derives from the main concept of The Polluter Pays Principle and represents a pressure factor on the producers to develop products avoiding unnecessary waste and which can be recycled and reused. Not only affecting the production, relating to the waste policy, the principle also refers to the end of the useful life-time of the products. Therefore, ‘producer responsibility may also take the form of obligations for the producer to recover products or to collect waste, to establish funds or deposit schemes for recovery or recycling, organise recycling or recovery or relate to the design and manufacture of the product in view of the later waste stage’.¹⁰⁰

98. See Thomas Lindhqvist, ‘Extended Producer Responsibility in Cleaner Production: Policy Principle to Promote Environmental Improvements of Product Systems’ (Doctoral dissertation, Lund University 2000) ii. ‘The EPR concept was introduced at a time when several European countries, notably Austria, Germany, the Netherlands, Switzerland, and the Scandinavian countries, were preparing and commencing the implementation of various policy instruments to improve the management of end-of-life products. The concept implies that responsibilities, which were traditionally assigned to consumers and authorities responsible for waste management, are to be shifted to the producer of the products.’

99. Waste Framework Directive, articles 8(1) and 14(1).

100. European Environmental Bureau (EEB), EU Environmental Policy Handbook: a critical analysis of EU environmental legislation: making it accessible to environmentalists and decision makers (EEB 2005) 83.

ii. *The Proximity Principle*

The proximity principle specifies that waste must be disposed of as closely as possible to its place of generation. The Framework Directive on Waste established in its Article 16(3) defines on the disposal or recovery of waste for it to take place in ‘the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health’. The proximity principle in the Waste Framework Directive has clear connection to the source principle in Article 191(2) TFEU, as the objective is a disposal of waste as close as possible to the place where has been produced, seeking to limit its transportation.

iii. *Principle of Self-sufficiency*

The need to establish an integrated and adequate network of disposal installations – taking into account the best available technology and not excessive costs – as defined in Article 5(1) of the Framework Directive on Waste should become a network enabling the EU to become self-sufficient in waste disposal. Member States naturally should move individually to contribute to this aim.

iv. *The Waste Hierarchy: from waste prevention to improvements in disposal and monitoring (treatment, reuse, recycling and recovery)*

To divert waste from the landfill is a main element of the EU policy on reducing the environmental impacts of waste management. Landfill should be used as the very last option, since waste that could not be recycled or reused, where possible, should safely be incinerated (a method closely monitored due to its potential for causing severe environmental damage). Articles 8 to 12 of the Waste Framework Directive required that MS put the waste hierarchy into effect and extended producer responsibility schemes may be enacted for that aim. The focus was set on waste that could not be prevented, as many materials as possible should be recovered from it, preferably by recycling. Provisions for reuse, recovery and disposal are also included in the Directive, with the highlight that Article 11(2) contains recycling and reuse targets for certain waste streams and the fact that MS policy in this regard is ruled by the guiding principles of Article 13. There, MS are required to ensure that waste is recovered or disposed of without endangering human health or using processes or methods which could harm the environment or cause nuisance through odours, noise or by adversely affecting the countryside or places of special interest. The European Commission has defined several specific waste streams for priority attention, seeking to reduce their overall environmental impact. At the same time, the waste directives require Member States

to introduce and develop legislation on waste collection, reuse, recycling and disposal of such waste streams, according to specific goals and deadlines.

3.3 Environment Action Programmes

The Environment Action Programmes (EAPs) comprise the basis for the European Union's policy on the environment by providing a general policy framework, where medium and long-term goals are defined and established in a basic strategy. The programmes date back to 1972, when Heads of State and Government agreed upon the importance of a common environmental policy for the Community and had the Commission developing the Environment Action Programme. The initial legal basis for the Environment Action Programmes was the Treaty of Maastricht in 1992, currently set out on Article 192 (3) if the Treaty of Lisbon, when it came into force in 2009.

The First Programme,¹⁰¹ in 1973, defined the principles and objectives for the European environment policy and listed mainly a large number of remedial actions considered necessary at European level. Later in 1977, the Second Programme¹⁰² mostly updated and expanded further the ideas brought by the first. It was then in 1983, with the adoption of the Third Programme, when a preventive approach was placed. The aim then was to avoid the rise of environmental problems by requiring social and economic developments to be undertaken differently, as the resources from the environment were recognised as the basis and the limits to them. In 1987, the Fourth Programme reflected new concerns, once facing the continuously deteriorating environment. More strict standards for environmental protection became essential, and the growing public demand for environmentally friendly goods led to an emphasis on the European industry. Priorities were set on measures which could improve the functioning of the internal market under such a point of view.¹⁰³

In 1998, the Fifth Environment Action Programme¹⁰⁴ was drafted by the Commission and would greatly impact European legislation in the years to come. This edition represented an important shift in the European Environmental policy by defining as its central objective the 'sustainable development'. Changes in society's patterns of behaviour were expected as a necessary step for achieving continued economic and social development without destroying the environment and natural resources needed by society itself for further development. The concept of shared responsibility would then be-

101. Council of the European Communities (n 93).

102. *ibidem*.

103. Jans and Vedder (n 85) 339.

104. Council of the European Communities and Representatives of the Governments of the Member States, Resolution on the European Community's Fifth Environmental Action Programme [1993] OJ C 138/1.

come the basis for reaching the involvement of all sectors of society (including public administration, enterprises, and general public). Therefore, in order to apply the concept of joint responsibility, the usual instruments permits and prohibitions had to be expanded to include taxes and fiscal incentives among other market-based instruments. Public information and education were relied on as also key supporting instruments.¹⁰⁵ Thus, the Fifth Programme proved to be far more strategic than the previous editions of Environmental Action Programmes. Direct reference to it was present inclusive in the recitals of quite a few European Directives on different waste streams as, for instance, in the Directive for Waste Electric and Electronic Equipment and its recast. Finally, the Sixth Programme,¹⁰⁶ from 1998, came as a revision¹⁰⁷ of the previous programme. It maintained the strategic style, but established four priority areas for new actions; climate change; environment and health; nature and biodiversity; and sustainable management of resources and wastes.

Up to this date, seven Environmental Action Programmes have been produced by the European Institutions. The most recent one, 2014-2020, brings as its guiding title 'Living well, within the limits of our planet.' In order to achieve this goal, one of the priority objectives is a resource-efficient, green and competitive low-carbon economy, in which waste reduction and management of waste as resource is included. The Seventh Environment Action Programme stands as a clear example of the political commitment of setting the reduction of waste generation and increase of innovation on recycling and reuse as one of its main objectives commitment: 'To reduce waste generation, to recycle waste into a major, reliable source of raw materials for the Union, to recover energy only from non-recyclable materials and to virtually eliminate landfilling'.¹⁰⁸ Over the years through the positive results of these strategy actions the EU has proven itself to be on the right track.

Along with those, solid policy signals are essential to establish long-term predictability which will influence and motivate investments and changes, for instance, on recyclable materials to re-enter the economy as secondary raw materials at competitive prices. According to the Commission, 'setting clear recycling targets for the period to 2030 will provide such predictability' and performing separate collection at source combined with rigorous methodologies to calculate recycling rates will enable a recycling of high quality as well

105. Jans and Vedder (n 85) 340.

106. European Parliament and Council of the European Union, Decision 1600/2002 laying down the Sixth Community Environment Action Programme [2002] OJ L 242/1.

107. European Parliament and Council of the European Union, Decision No 2179/98/EC on the review of the European Community programme of policy and action in relation to the environment and sustainable development 'Towards sustainability' [1998] OJ L 275/1.

108. European Commission, 'Towards a circular economy: A zero waste programme for Europe' COM(2014)398 final, 8.

as the development of markets for the supply of high quality secondary raw materials.¹⁰⁹

The communication from the Commission to the Parliament drew in 2014 increased attention to the importance of considering waste as a resource: ‘Turning waste into a resource is part of ‘closing the loop’ in circular economy systems.’ Targets and objectives already established in the European legislation have been main guidance to an improved management of waste, considering that the actions of limiting landfilling, reducing losses of resources, stimulating reuse and recycling through innovation, among others have been thoroughly sustained for years.¹¹⁰

Some of the Commission’s propositions were the following:

- To increase the recycling rate for packaging waste to 80% by 2030, with interim targets of 60% by 2020 and 70% by 2025, including targets for specific materials
- To ban the landfilling of recyclable plastics, metals, glass, paper and cardboard, and biodegradable waste by 2025, while Member States should endeavour to virtually eliminate landfill by 2030
- To boost reuse and recycling of municipal waste to a minimum of 70% by 2030
- To further promote the development of markets for high quality secondary raw materials, including through evaluating the added value of end-of-waste criteria for specific materials
- To clarify the calculation method for recycled materials in order to ensure a high recycling quality level
- Further on the proposal to reduce the use of lightweight plastic bags, to ban plastics from landfills by 2025¹¹¹

The instruments adopted by the EU for enhancing waste management and its implementation vary from economic measures to landfills bans. As for the economic measures, taxes to landfill or incinerate taxes, extended producer responsibility schemes, pay-as-you-throw, as well as incentives for local authorities for promoting prevention, reuse and recycling have proven to be very effective.

More specifically, the Fifth edition of the Environmental Action Programme was indeed the policy reference to the WEEE Directive and, further ahead, for the recast WEEE Directive. The Fifth Environmental Action Programme stated that the achievement of a sustainable development called for substantial changes in current patterns of development, production, consump-

109. *ibidem* 9.

110. *ibidem* 8.

111. European Commission (n 108) 13.

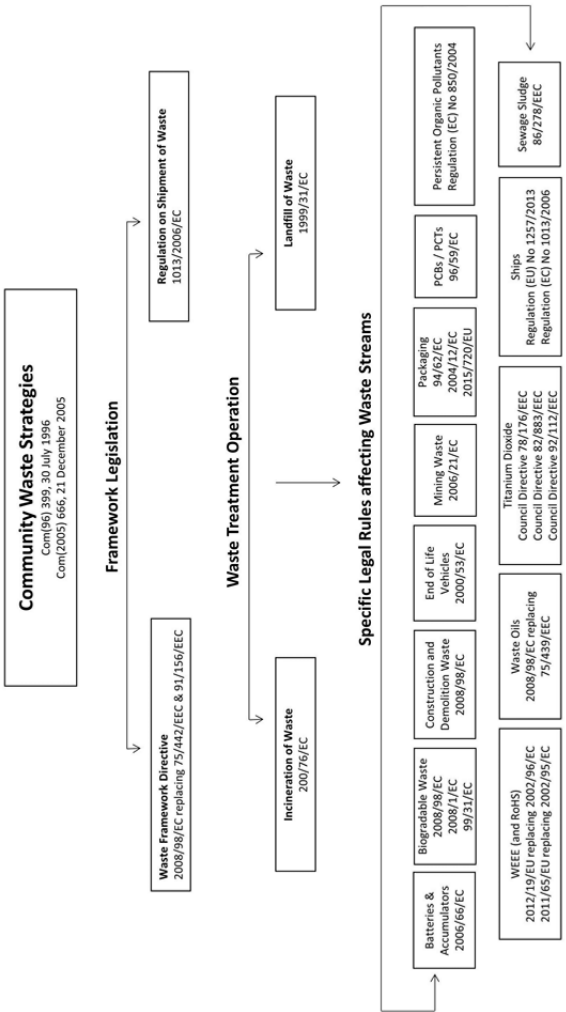
tion and behaviour. Additionally, it promoted the reduction of the consumption of natural resources and the prevention of pollution. Concerning the WEEE Directive, such edition of the Environmental Action Programme presented a full chapter focusing on waste management issues, being WEEE one of the target areas mentioned to be regulated by the application of the principles of prevention, recovery and safe disposal of waste.

3.4 EU's legal approach to Waste Management

Based on Title XX of the Treaty on the Functioning of the European Union, EU environmental law recognises the waste management issue among its main concerns. With an amount of waste early produced observed to be steadily rising,¹¹² it became clear that complimentary Directives and Regulations should be embodied in the European environmental law to approach the issue in its diverse angles. Setting goals and targets to limit the generation of specific waste-streams, optimise the Waste Framework Directive, and organise the waste treatment and disposal among EU Member States were some of the measures clearly necessary. Following this, throughout the years, the European waste strategy developed into the following legal structure.

112. According to the Commissions' report, an amount of approximately 3 billion tonnes. European Commission, 'Being wise with waste: the EU's approach to waste management' (Publications Office of the European Union 2010) 2.

Figure 3.1 European Waste Law Overview



In the next subsections (3.4.1 and 3.4.2) the main legal instruments of EU waste law – Directives and Regulations – are briefly explained. A proper understanding of this content is relevant as a basis to further parts of this research.

3.4.1 European Directives

The directive constitutes the main legal form under which European waste law has developed so far.¹¹³

In order to achieve the aims set out in the EU treaties, a number of legal acts were created as instruments to the legal framework of the European Union. Some apply to all EU countries, others only to specific Member States. Some are binding, while others are not. The Directives stand among these legislative acts, however instead of simply giving general instructions for action, as one would infer from its name, according to Prechal 'the directive has developed into a fully-fledged legislative instrument of the Community',¹¹⁴ being used by the European institution as legal instruction instrument for harmonising national legislation and implementing European policies.

Certainly there are considerable differences among directives according to the subject matter to which they relate. Still, a brief comment on the usual content of a directive can be useful to further understand the concept of 'European Directive'. Every directive has a 'hard core' represented by its substantive rules. These rules are responsible for specifying the scope and the purpose of a specific directive, as well as for expressing the provisions which describe the required scenario to be attained by each and every Member State once the directive has been transposed. Although the provisions stated in a directive can relate to either substantive or procedural laws they represent no difference concerning the implementation process. This is so as, regardless of the provisions' features, a directive is expected to be fully transposed into each legal framework of the Member States.¹¹⁵

As explained by Prechal, according to article 288 of the Treaty on the Functioning of the European Union¹¹⁶ (TFEU), Member States to which the Directive addresses to are binding as to the result prescribed by it. As a Directive is not directly applicable, it must be enshrined into national law. The Member States are, therefore, obliged to adopt transposition measures to a national level in order for it to become fully effective. In that sense, as the main feature of a Directive is of not being self-sufficient, it allows for the Member States to choose the form and methods of achieving the adopted results by selecting the most suitable procedures. In fact, Member States are expected to adapt their laws only as much as necessary to reach 'the objectives set out in the relevant Treaty provision which serves as the legal base for the directive'¹¹⁷ and it is 'considered essential that the measures taken by

113. Hannequart (n 95) 28.

114. Sacha Prechal, *Directives in EC law* (University Press 2005) 92.

115. *ibidem* 41-42.

116. Former article 249 TEC before amendments by the Lisbon Treaty which came into force in 2009.

117. Prechal (n 114) 4.

the different Member States are to be applied with the same effectiveness and strictness as in the application of their national law'.¹¹⁸

It is worth noting that a directive establishes a result obligation towards the Member States, creating on them the necessity not simply to transpose the text of the directive, but specially take measures in such a way as to ensure the directive to be fully effective. As discussed by Prechal, a correct implementation process would comprise three closely related, although distinguishable, matters. The first refers to the requirements concerning the 'content of the measures adopted with a view to implementation', the second relates to the requirements regarding the 'nature of the measures', and the third concerns the 'effective application and enforcement in practice' of such measures.¹¹⁹

Prechal defines as 'implementation' the full process of accomplishing the obligations under Article 288 TFEU, composed of the stages of transposition, application and enforcement. In a brief explanation, the transposition is the 'process of transforming directives into provisions of national law by the competent national legislative body or bodies'. While the 'application' is basically 'the administration of directives in a concrete case', and finally, the enforcement 'refers to the process of compelling observance of the directive, either as such or as the national measures transposing it'.¹²⁰ The European Commission also plays an important role in the process of EU (environmental) legislation. Although the responsibility for implementation of EU environmental legislation belongs to the Member States, as a guardian of the Treaty, the Commission has the chore to ensure the full application, enforcement and implementation of EU's environmental legislation. For instance, the sixth Environment Action Programme¹²¹ brought this procedure as a strategic priority, when the Commission was appointed to work together with Member States to increase in the overall ability of environmental institutions to successfully implement EU standards, and to draw up a revised strategy on implementation and enforcement of EC environment law.

Furthermore, to adopt the necessary measures for implementation of a directive within the period prescribed by the directive at issue is an extremely rigorous obligation. It is important to stress how Member States are prevented by the Court of Justice from presenting financial, administrative or practical difficulties as an justification for non-compliance with the requirements and deadlines. The reasoning for this procedure is the awareness from the Court of the involvement of the governments of the Member States at the preparation of a directive. The motives for the Court to present strict rules

118. Jans and Vedder (n 85) 141.

119. Prechal (n 114) 32.

120. *ibidem* 5.

121. European Commission, 'Communication on the Mid-term review of the Sixth Community Environment Action Programme' COM(2007) 225 final, 16.

with respect to implementation of directives within the period provided can be understood by the fact that a non-simultaneous implementation could lead to discrimination and consequently jeopardise uniform application of Community law within the Member States. 'Indeed, the harmonising effect of directives requires entry into force of the implementing measures from the same date, since the very purpose of a directive would otherwise be seriously compromised.'¹²²

3.4.2 European Regulations

Along with directives, decisions, recommendations and opinions, regulations are one of the various types of EU secondary legislation. In contrast with the Directives, the Regulations are of general application, binding in their entirety and directly applicable. They are described to be necessarily complied in full by those to whom they apply (private persons, Member States, or Union institutions). As soon as regulations enter into force – whether on the date stipulated or, if not, on the twentieth day following their publication in the Official Journal of the European Union – they become directly applicable and do not need to be transposed into national law. They also overrule national laws that are found to be incompatible with their substantive provisions. The main purpose of how Regulations have been designed is to provide for uniform application of Union law in all the Member States.¹²³

3.4.3 EU legislation for waste relevant for the WEEE take-back systems

As explained in the introductory chapter of this research, given the wide range of waste streams and directives and the need to have a focus for academic purposes, this research will approach the legal rules and policies in the EU that have developed the WEEE take-back systems. Those were inaugurated by the WEEE Directive (2002/96/EC) and further enhanced by the recast WEEE Directive (2012/19/EU). Considering that such Directives, in specific, represent central part of this study, they will be further approached and analysed in specific chapters later on this study.

i. Waste Framework Directive

The Waste Framework Directive (WFD) shapes the legal basis of European waste legislation. The first WFD dates from 1975, but since then, it has been

122. Prechal (n 114) 23-24.

123. European Parliament, 'Sources and Scope of European Union Law – Fact Sheets on the European Union'
<www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuId=FTU_1.2.1.html> accessed 10 April 2014.

revised several times and codified (2006), and thoroughly revised (2008).¹²⁴ The WFD repeals the previous Directive 2006/12 on waste and Directives 75/439/EEC and 91/689/EEC regarding waste oils and hazardous waste, respectively. Published in the Official Journal of the European Union on 22 November 2008, the revised Waste Framework Directive applies since 12 December 2010 and all Member States of the EU are bound by the principles and targets it introduced, therefore, being required to adopt waste management plans and waste prevention programmes.

The revised Directive was a part of the process of ‘better regulation’ in which existing environmental legislation was analysed for possible simplification and clarification (although not lowering the level of environmental protection). It clarifies concepts, such as the definitions of waste, recovery, and disposal. And it lays down the appropriate procedures applicable to by-products and to waste that ceases to be waste. The WFD also indicates the objectives of the ‘Thematic Strategy on the prevention and recycling of waste’. It suggests that the Directive should help move the EU closer to a ‘recycling society’, seeking to avoid waste generation and use waste as a resource (Recital 28), and introduces new provisions in order to boost waste prevention and recycling as part of the waste hierarchy.

The current version of the Waste Framework Directive defined aspiring targets: by 2020, 50% preparing for reuse and recycling of certain waste materials from households, and other origins similar to households, and 70% of construction and demolition waste preparing for reuse, recycling, and other recovery (Article 11(2)).

ii. *Landfill Directive and Landfill Bans*

The Directive 99/31/EC¹²⁵ – the Landfill Directive – is considered a breakthrough in EU waste policy as it shows a decisive shift from landfill towards the EU's new waste hierarchy. It reflected the concern on shortages of landfill capacity in the Member States, as well as methane emissions and water and soil pollution, all of those being great concerns by the mid-1990s.

The priority was shifted to waste prevention, encouraging re-use, recycling and recovery, and whenever possible, landfilling should be avoided. Basically, the Landfill Directive established targets for reducing the amount of biodegradable municipal waste landfilled in a progressive scale, until 2016. Nonetheless, according to the report from the European Environment Agency (EEA) ‘Diverting waste from landfill, effectiveness of waste-

124. See Directive 75/442/EEC, Directive 2006/12/EC (first legally valid version of the Waste Framework Directive), and Directive 2008/98/EC.

125. The Landfill Directive was adopted by the European Community (EC) in 1999. It sets tough operational and technical requirements for disposal of waste by landfill, with the aim of reducing the negative effects of landfilling. Every Member State of the European Union (EU) was required to implement it from 16 July 2001.

management policies in the European Union',¹²⁶ identifying the extent to which EU policies have provoked change in national waste management practices represented a complex task. The complexity of it was due to the fact that the process of diverting biodegradable municipal waste from landfill had different timelines throughout the countries and regions studied, therefore, a process being developed in different speeds and, evidently, a process which presents greater impacts in locations where the process of shifting away from landfill was not already under way. Nevertheless, the findings of the report were considered clear by the EEA, stating that 'the Landfill Directive has been effective and advancing the closure of landfills and increasing the use of alternative waste management options'.

Considered a highly effective directive, the Report 'Implementing EU Waste Legislation for Green Growth' prepared for the European Commission¹²⁷ identifies two main factors which led to the success of the Landfill Directive. The first one was the arrangement of both long-term and intermediate targets. This delivered a clear framework for countries to reduce the landfilling of biodegradable municipal waste; especially once the targets have assisted governments and the European Commission to quantify progress and to keep attention on the main issues. Secondly, the fact that it is such a flexible directive has been a key advantage, providing Member States with the space to attempt alternative policies, adapt measures to match national and regional realities (including pre-existing waste management practices, institutional structures and environmental conditions), and adjust policies according to experience.

A practical example of how flexibility has been important to the implementation process is the case of landfill charges. Higher landfill charges reduce the amount of waste sent to landfill and tend to push waste towards recycling and composting, and those charges vary enormously in the current EU27 – from €3 a tonne in Bulgaria to €107 a tonne in the Netherlands. Such a cost variation denotes how crucial it is to allow Member States to keep a degree of flexibility so to be able to implement [economic] instruments appropriately when considering local factors.

When observing the difficulties faced by the Member States for the implementation of this directive, a lack of a developed market for the reuse of biodegradable waste is perceived as a critical difficulty particularly for newer Member States such as Czech Republic and Hungary. Along with a lack of specific market, other issues also considered critical to achieving targets, such as lack of effective tools for the reduction of biodegradable waste; lack

126. European Environment Agency (EEA), 'Diverting Waste From Landfill - Effectiveness of waste-management policies in the European Union' (EEA Report No 7/2009) 7 <www.eea.europa.eu/publications> accessed 8 May 2014.

127. BIO Intelligence Service, 'Implementing EU Waste Legislation for Green Growth: Final Report prepared for the European Commission/DG Environment' (29 November 2011) 165-169 <<http://ec.europa.eu/environment/waste/studies/>> accessed 5 March 2014.

of funds; lack of human resources; and lack or delay of approval and enforcement of national strategies and related implementing measures. In the case of the Landfill Directive, local authorities are more involved in the practical problems relating to localization and operation of landfill sites. Therefore, a more direct involvement of these authorities in the implementation process of waste policies with a direct impact on the territory may be important.¹²⁸ Regional and local authorities are aware of the problems and opportunities arising from implementation of the legal framework for waste management, therefore, 'a good level of consultation of regional and local authorities in the drafting process of national transposing measures can be considered fundamental to the subsequent implementation of EU Directives.'¹²⁹ For waste policy to be successful in this field it must not only be well-planned, but also supported and improved by other tools such as economic incentives, adequate policies, strategic information, and involvement of all stakeholders. In order to introduce such waste policies, the role of regional and local authorities is essential since they are the only ones able to provide the preliminary understanding of the local situation in order to set up a focused waste policy, and because the implementation of these policies requires a thorough territorial presence, which only regional and local authorities enjoy.¹³⁰

Effective sorting of WEEE and separate recycling treatment are not enough to establish a smooth functioning WEEE management system on national basis. The steadily increasing taxes introduced for putting waste on landfill and also incineration of waste have served as effective encouragement for introducing sorting, collection and further treatment of WEEE.¹³¹ In the same vein, the EEA report 'Diverting waste from landfill'¹³² concludes that landfill taxes together with product charges can play a significant role in diverting waste from landfill.

128. Committee of the Regions, 'Implementation of the Landfill Directive at Regional and Local Level' (Publications Office 2006) 13.

129. *ibidem* 12.

130. *ibidem* 59-60.

131. Vanessa Goodship and AB Stevels (eds.), *Waste electrical and electronic equipment (WEEE) handbook* (Woodhead Publishing 2012) 518.

132. EEA (n 126).

iii. *Regulation on Shipment of Waste*

Regulation (EC) No 1013/2006 of 14 June 2006 on shipments of waste lays down procedures for the transboundary shipments of waste in order to address the problem of uncontrolled transport of waste. The Regulation has been implemented into EU law the provisions from the ‘Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal’¹³³ as well as the OECD Decision.¹³⁴ Exports to non-EU countries of waste for disposal are prohibited, except to EFTA countries¹³⁵ that are party to the Basel Convention. Exports for recovery of hazardous waste are prohibited, except those directed to countries to which the OECD decision applies. Imports from non-EU countries of waste for disposal or recovery are prohibited, except for imports; from countries to which the OECD decision applies; non-EU countries that are party to the Basel Convention; countries that have concluded a bilateral agreement with the EU or EU countries; or other areas during situations of crisis.

iv. *The RoHS Directives*

The first RoHS Directive¹³⁶ was published in the Official Journal in early 2003. RoHS Directives require that heavy metals such as lead, mercury, cadmium, and hexavalent chromium and flame retardants such as polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) are replaced by safer alternatives in the process of producing EEE. Those restricted materials are hazardous to the environment and pollute landfills. They are also unsafe in terms of occupational exposure during manufacturing and recycling. Since 1 July 2006, producers have needed to ensure that their products – as well as the components and subassemblies of such products – comply with the requirements established by the provisions of the RoHS Directive by the relevant date in order to be put on the European market. Directive 2002/95/EC was repealed by the recast Directive 2011/65/EU¹³⁷ in 2013. Evidently RoHS is closely linked with the Waste Electrical and Elec-

133. The Basel Convention is a global legal instrument for controlling transboundary movements of hazardous wastes and their disposal. Adopted in 1989, it entered into force in 1992. Its affiliated instruments are the Basel Ban (1995), the Liability Protocol (1995), and the Environmentally Sound Management (1999) <www.basel.int> accessed 1 August 2015.

134. OECD, ‘Decision of the Council concerning the Control of Transboundary Movements of Wastes Destined for Recovery Operations of 14 June 2001 - C(2001)107/final’ as amended by C(2008)156 on 18 November 2008.

135. The European Free Trade Association. EFTA Member States are Iceland, Liechtenstein, Norway and Switzerland. See <www.efta.int> accessed 1 August 2015.

136. Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment [2003] OJ L 37.

137. Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment [2011] OJ L 174.

tronic Equipment Directive (WEEE). While WEEE Directives articulate collection, recycling and recovery targets for end-of-life electrical and electronic equipment, the RoHS Directives aim at reducing the amount of toxic waste produced by electronics post-use. Combined, the Directives regulate the product life-cycle of electrical and electronic equipment, contributing to a circular economy.

v. *The European List of Waste*

The European Waste Catalogue (EWC)¹³⁸ was to be a reference nomenclature providing a common terminology throughout the Community with the purpose to improve the efficiency of waste management activities. It was further developed into the European List of Waste (LoW) by Commission Decision 2000/532/EC. The LoW establishes the classification system for wastes, which includes a distinction between hazardous and non-hazardous wastes. It serves as a common encoding of waste characteristics in a broad variety of purposes such as transport of waste, installation permits, decisions about recyclability of the waste or as a basis for waste statistics. Decision 2000/532/EC is closely linked to the list of the main characteristics which render waste hazardous contained in Annex III to the Waste Framework Directive. According to Decision 2000/532/EC, the LoW should be regularly revised on the basis of new knowledge and, research results.¹³⁹

3.5 Conclusions

This chapter has shown the environmental policies and legal framework developed by the European Union since 1973 and its development. As seen, the early concerns of the European Community in establishing policies to approach environmental problems caused by modern society has found a wide legal structure covering a diversity of inter-connected issues. At a closer look, the concepts and principles established, the action programmes guiding priorities, the framework directives, and the specific directives, regulations, decisions, recommendations and opinions are a remarkable structure approaching and supporting the different environmental issues that have emerged in the EU during the last decades.

According to what has been studied in this chapter, the Waste Framework Directive has been central to the structured development of the European policies and legal rules to approach waste related issues. Mainly, this relevance is due to the concepts it has introduced: ‘Waste Hierarchy’, ‘the Pol-

138. European Commission Decision establishing a list of wastes pursuant to Article 1a of Council Directive 75/442/EEC on waste [1994] OJ L 5.

139. European Commission, ‘Waste Framework Directive – The European List of Waste’ <<http://ec.europa.eu/environment/waste/framework/list.htm>> accessed 8 April 2014.

luter Pays Principle', 'Waste Streams' and 'the Extended Producer Responsibility'. Those have proven to support and enhance cohesion in policies and to set clearer and stricter goals to EU Member States towards the protection of the environment and human health.

Waste Electrical and Electronic Equipment Directives (WEEE)

4.1 Introduction

Regardless of the field observed, adequate waste management is a topic of major concern for all countries in contemporary society. In fact, considering that the industrial revolution and its impacts on production date back since 1870, only recently have governments been applying integrated policies to deal with waste and tackle the problems caused by its increasing production and inappropriate disposal aiming at reduction, reuse and recycling. The European Union has been one of the first to develop legislation under those terms, since the late 70's.¹⁴⁰ And even more recently, waste electrical and electronic equipment (WEEE) has gained special attention as it currently represents the fastest growing waste stream in the region. The 'e-waste' has been growing about 3-5% a year,¹⁴¹ almost three times faster than the average waste, and is expected to reach 12 million tonnes a year by 2020.¹⁴² As a reaction to these figures, and to the fact that it is one of the waste streams offering the highest risks both to health and the environment, WEEE is increasingly under the spotlight in discussions about nation-wide regulations for waste treatment.

In order to fully understand the subject of this chapter, an important start is to become acquainted with some of the most known definitions for WEEE – also referred to as 'e-waste' – adopted worldwide. Institutions from the most diverse origins have attempted to define WEEE along the years, leading to quite a few different concepts. However, despite the fact that there is no standard definition for e-waste, a set of three elements can be identified in nearly all of them. More specifically, the following three elements: an explanation for 'electrical and electronic equipment', 'loss of utility', and the need

140. See Directive 75/442/EEC [1975] OJ L 194.

141. According to waste statistics from the European Commission – electrical and electronic equipment, the amount of EEE put on the market in 2010 was of 9.7 million tonnes. In the same year, 3.4 million tonnes of WEEE were treated, of which 3.0 million tonnes were recovered. See further
<http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Waste_statistics_-_electrical_and_electronic_equipment> accessed 23 June 2014.

142. European Commission, 'Being wise with waste: the EU's approach to waste management' (Publications Office of the European Union 2010) 16.

– implicit or not – for ‘disposal’ were found composing the definitions analysed.

The first of the definitions was elaborated by the Organisation for Economic Cooperation and Development (OECD)¹⁴³ in 2001, in its manual for governments concerning extended producer responsibility, where e-waste was considered ‘any appliance using an electric power supply that has reached its end-of-life.’ In 2003, the European Waste Electrical and Electronic Equipment Directive¹⁴⁴ came into force and defined WEEE as ‘electrical or electronic equipment which is waste within the meaning of Article 1(a) of Directive 75/442/EEC,¹⁴⁵ including all components, subassemblies and consumables which are part of the product at the time of discarding’.¹⁴⁶ And, further, the StEP Initiative, in 2005, initially explained e-waste as ‘the reverse supply chain which collects products no longer desired by a given consumer and refurbishes for other consumers, recyclers, or otherwise processes wastes.’ In 2014 a White Paper¹⁴⁷ informed the definition of e-waste agreed by StEP to be ‘E-Waste is a term used to cover items of all types of electrical and electronic equipment (EEE) and its parts that have been discarded by the owner as waste without the intention of re-use’. Currently, the most widely accepted definition of e-waste is the one brought by the EU WEEE Directive, as it is adopted by EU Member States and even other European countries.

A few years after the publication and implementation of the European Directive for Waste Electrical and Electronic Equipment, it was time for evaluating its application process. According to the development of the state of technology, environmental requirements, the functioning of the internal market – particularly regarding collection, treatment, recovery, and financing systems – proposals for revision of the relevant provisions were accompanying the report from the Commission to the European Parliament and the Council. The revision led to the recast of the WEEE Directive, a recent event which created a suitable occasion to get acquainted with the changes and new targets for dealing with e-waste, initially scheduled to be applied from 2016.

The recast of the WEEE Directive also offers an opportunity to look back and evaluate the development of the legislation for this waste-stream. Having

143. OECD, ‘Extended producer responsibility: a guidance manual for governments’ (OECD 2001).

144. Directive 2002/96/EC defined ten different categories. Directive 75/442/EEC, article 1(a) defines ‘waste’ as ‘any substance or object which the holder discards or intends or is required to discard’ (replaced by EU Directive 2008/98/EC, Article 3(1)).

145. OJ L 194, 25.7.1975, 39. Article 1(a) ‘“waste” shall mean any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard’.

146. Directive 2002/96/EC on waste electrical and electronic equipment (WEEE) [2003] OJ L 037, article 3(b).

147. Further, the Step definition of EEE is ‘Any household or business item with circuitry or electrical components with power or battery supply’. Step Initiative, ‘One Global Definition of E-waste’ Step White Paper (UNU/Step Initiative 2014) 4 <www.step-initiative.org/publications.html> accessed 5 March 2015.

in mind the definitions for WEEE and the concerns its growing figures represent nowadays, the purpose of this chapter is to study not only the context which triggered the European Union to draft and bring into force a Directive on waste electrical and electronic equipment, but also the discussions arising during its drafting, as well the outcomes of both its transposition and implementation processes. Later in the chapter, the successful outcomes and issues resulting from the directive are observed with great interest, as further in this book those will become the basis for a discussion concerning possibilities for transplanting those provisions to the Brazilian legal framework on waste.

4.2 The Electronic Waste matter in Europe

The concern over the negative effects of industry and its products on society and the environment is a rather recent phenomenon considering the existence of the Industrial Era ever since the 18th century. Only in the last few decades the term ‘sustainability’ has been used beyond a theoretical concept from environmental law, to describe a socioeconomic behaviour which seeks to promote the endurance of systems and processes by interconnecting ecology, economics, politics and culture. In the business sector, the concept of ‘Corporate Social Responsibility’ (CSR) only integrated the environment concern around the 1970s. It is likely that this was a response to the times – late 1960s and early 1970s – when social movements with respect to the environment, worker safety, and consumers were ready to transition from special interest status to government regulation.¹⁴⁸ The change occurred in a few decades was a reaction to the accelerated growth of world’s population, the escalating need for technological goods, and in consequence, the use of the natural resources available on the planet. The composition of waste, unsurprisingly, has being largely impacted, swerving from expressive organic elements to inorganic ones, which directed the concern over industry’s effects especially to the electrical and electronic equipment and the issues resulting from WEEE treatment and disposal.

As stated by Martin Goosey, not so long ago there was a ‘lack of sustainable behaviour in the manufacture, use and disposal of electrical and electronic products.’¹⁴⁹ The electronics industry indeed has an enhanced non-sustainable profile, if taken into account the fact that equipment and technological devices are evaluated based on the improved performance and reduced cost each new generation of product has to offer, consequently, having a short lifecycle (meaning hazardous materials being disposed in a short amount of time). Furthermore, not only short lifecycles, and consequent ob-

148. Archie B Carroll, ‘Corporate Social Responsibility: Evolution of a Definitional Construct’ (1999) 38(3) *Business & Society* 268-295, 275.

149. M Goosey, ‘Introduction and Overview’ in RE Hester and RM Harrison (eds) *Electronic Waste Management: Design, Analysis and Application* (RSC Publishing 2009) 2.

solescence of products which were still in good conditions were a pattern for EEE industry. Product design for sustainability was non-existing and, likewise, represented one more challenge for the management of this waste stream, as it had no concern for producing goods that would facilitate recycling processes once they were disposed. Rather, product design would intend to make the process of upgrading difficult and pricy, leading consumers to choose for a simpler solution: to replace the equipment for a newer version, the so-called 'planned obsolescence'. In the long term, this practice would cause other negative effects, raising the costs of new raw materials and energy costs in general.

Different concerns can be triggered from the WEEE matter, and the extremely specific composition of waste electric and electronic equipment, once compared to other waste-streams, represents one of them. For this reason, conventional waste management policies cannot be simply applied when it comes to WEEE. The equipment contains highly toxic substances posing a danger to human health and the environment. Moreover, WEEE brings along valuable amounts of raw materials which demand advanced technology procedures to be recovered. Huisman¹⁵⁰ states in his study about recovery of raw materials that, in e-waste recycling, many base metals can be recovered up to more than 90% and precious metals up to 98%. The recycling process of each metal was compared with the impact of primary production, and the analysis indicated that recycling WEEE causes a much smaller environmental impact than producing from scratch.¹⁵¹

A report published by the European Commission in 2003 observed the period between 1990 and 2001 and revealed that, in those years, data concerning waste management was not structured, nor fully available. However, despite the need for some estimates, the overall figures lead to the conclusion that during those years, in 8 out of 18 Western European Countries, landfill represented the main practice for managing WEEE, with a considerable increase in incineration and, more recently, also recovery methods. In the case of Eastern European Candidate Countries, landfill was the leading method for managing municipal waste and in countries as Bulgaria, Cyprus, Lithuania, Romania and Slovakia, there was no other method than landfilling.¹⁵² In sum,

150. Jaco Huisman, 'The QWERTY/EE Concept, Quantifying Recyclability and Eco-Efficiency for End-of-life Treatment of Consumer Electronic Products' (Delft University of Technology 2003) 93.

151. Deepali S Khatriwala, Philipp Kraeuchib and Rolf Widmer, 'Producer responsibility for e-waste management: Key issues for consideration – Learning from the Swiss experience' (2009) 90(1) *Journal of Environmental Management* 153-165, 153.

152. European Commission, 'Waste generated and treated in Europe: Data 1990-2001' (Office for Official Publications of the European Communities 2003) 6. At the time, EU-15 (Belgium, Denmark, Germany, Greece, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Spain, Finland, Sweden, United Kingdom), Switzerland, Iceland and Norway. Candidate Countries: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, Turkey.

at a time as recent as the 1990s, there were few national specific regulations, procedures or targets defined for WEEE in Europe, and more than 90% of the e-waste was mostly landfilled, having incineration or recovery – without any pre-treatment – as the destination for the disposal of only a small share of WEEE.¹⁵³

One last concern to be mentioned relates to WEEE's fast growth and transboundary issues. A worrisome situation caused by the lack of structure and capacity – of those countries producing and consuming great amounts of EEE – to deal with the high quantity of hazardous substances and complex materials which should be recycled and treated at the end of the cycle. Least developed countries,¹⁵⁴ especially African and Asian ones, considerably under-polluted when compared to European ones and were spotted as destinations for waves of e-waste through pollution trading schemes. Less strict environmental protection and labour laws than the ones applied in Europe turned those countries into convenient destinations for the shipment of e-waste and inadequate processes of recycling and recovery of precious metals, risking thousands of lives. Those events increased the awareness of global society towards the waste management regulations, resulting in an international initiative protecting human health and the environment against the adverse effects of hazardous wastes and their disposal. In force since 1992, the Basel Convention¹⁵⁵ regulates the transboundary movement and disposal of hazardous wastes, and imposes an onus on countries exporting in order to ensure hazardous waste to be managed in an environmentally sound manner when in the country of import. In the aim of EU legislation, the convention has been complemented by the Council Regulation (EEC) No 259/93, the enacting of the Directive 2002/95/EC on RoHS and of the WEEE Directive 2002/96/EC (Article 6), the Waste Shipment Regulation 1013/2006 (WSR) – which was specifically adopted for approaching this issue more directly – and, a few years later, the recast of the WEEE Directive, which under a more assertive position included in its recitals and provisions actions to prevent the shipment of waste (Recital 15, Articles 10 and 23 and Annex VI).

As a reaction to the growing problems and difficulties related to the management of waste, the European Commission sought to develop more specific strategies, as for instance, the review of the Community strategy for waste

153. European Commission, 'Staff working paper accompanying the proposal for a directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) Impact Assessment SEC(2008) 2930, 9.

154. To mention a few: Ghana, Nigeria, Pakistan, India and China. To know more see UN's StEP initiative.

155. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) 1673 UNTS 126.

management.¹⁵⁶ Among the strategies proposed in the review there was a definition of the priority waste streams: used tires, end-of-life vehicles, healthcare waste, construction and demolition waste and waste from electrical and electronic equipment. For this chapter, the attention will be driven to the procedures and discussions over the waste electrical and electronic equipment, which resulted in the WEEE Directive in 2003.

4.3 The choice for the WEEE Directives

Since 2003, the topic of waste electrical and electronic equipment in the European Union has been regulated by Directives addressed to all the Member States. The first Directives were issued on January 27, 2003 (Directive 2002/95/EC on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment – RoHS), and of January 27, 2003 (Directive 2002/96/EC on Waste Electrical and Electronic Equipment – WEEE). Those were further revised in the following years – 2011/RoHS and 2012/WEEE – to include improved concepts, simplified procedures, updated targets and a new classification.

While the RoHS Directive is intended to restrict the use of certain hazardous substances in EEE in order to increase the protection of human health and facilitate environmentally-sound recovery and disposal of WEEE, the main priority of the WEEE Directive is to prevent the generation of this category of waste, as well as to improve the performance of the treatment operations for the reuse, recycling and other forms of recovery of WEEE. As it could be no different, the Directives complement each other and are based on common definitions, such as ‘producer’, ‘authorised representative’, ‘EEE’, ‘WEEE’, among others. The first WEEE and RoHS, also followed the same set of categories (Annex IA to Directive 2002/96/EC). The recast WEEE and RoHS Directives both adopt an open scope for EEE (with a few exceptions).

It is clear that both Directives resulted from of a long process of discussions, evaluations, and negotiations during the drafting as well as the national processes of implementation into national law in each of the Member States. To study those processes referring to each Directive (and recasts) would convert this research into a much broader one and, most likely, the three-year-time assigned for this PhD Programme would become insufficient to develop such an in-depth study. Therefore, given the purpose of this research – to study the development and implementation of the European legislation for establishing an environmentally sound WEEE System – the study will focus on the drafting and implementation process of the WEEE Directive,

156. European Commission, ‘Communication from the Commission on the review of the Community Strategy for Waste Management’ COM(96) 399 final (1996) 13.

since it is the one which brings the basis for the establishment of a WEEE system, defining stakeholders, obligations and instruments.

4.4 Directive 2002/96/EC of 27 January 2003

As a response to the side effects of the fast growth of technological innovation, the burden brought to municipal authorities, and the complex mixture of materials and components WEEE contains – some being harmful¹⁵⁷ to human health and the environment and some comprising valuable resources which can be recycled to replace raw material production – the European Union designated electro electronic waste as one of the priority waste streams.

Following the Council Resolution of 7 May 1990¹⁵⁸ calling for Community-wide action on waste, in 1991, the European Commission initiated the Priority Waste Streams Programme which focused on six different waste streams. In 1994, the EU Commission set up a project group to develop proposal for EU action on the topic. In July 1995, the project group submitted a recommendation document, ‘Priority Waste Streams: Waste from Electrical and Electronic Equipment’,¹⁵⁹ prepared by the Italian National Agency for New Technology, Energy and the Environment. The project focusing on WEEE was intended to be developed on a European scale, focusing mainly on the process of proper collection and environmentally sound treatment during the waste management phase; important when considering the toxicity of e-waste.¹⁶⁰ As stated later by the Working Party on the Environment, the ‘expansion of the electrical and electronic equipment industry generates an increasing flow of waste products with a high environmental impact. As a result, an improvement in the recovery of WEEE would yield major savings in resources, particularly energy resources. This proposal for a Directive is intended to restrict the harmful impact of WEEE on the environment.’¹⁶¹

Originally conceived in the late 90’s,¹⁶² the first draft connected the collection and treatment of WEEE with the aims of the Restriction of Hazardous

157. Later on the provisions of the Directive, Article 3(l) 2002/96/EC defined ‘dangerous substance or preparation’ as ‘any substance or preparation which has to be considered dangerous under Council Directive 67/548/EEC or Directive 1999/45/EC of the European Parliament and of the Council.’ Council Directive 67/548/EEC (OJ 196, 16.8.1967, 1) and Directive 1999/45/EC (OJ L 200, 30.7.1999, 1).

158. Council Resolution 7 May [1990] OJ C 122/2.

159. AM Welker and D Geradin, ‘Waste from Electrical and Electronic Equipment: Producer Responsibility: A Review of Initiatives in the EC’ (1996) 5(12) European Energy and Environmental Law Review, 341.

160. European Commission, ‘Implementation of the Waste Electric and Electronic Equipment Directive in the EU’ Joint Research Centre Institute for Prospective Technological Studies (Technical Report Series 2006) 4.

161. Council, ‘Outcome of proceedings COD 2000/158’ Working Party on the Environment (27 September 2000) 1.

162. Deepali S Khatriwal and others, ‘One WEEE, many species: lessons from the European model’ (2011) 29(9) Waste Management & Research 954-962, 954.

Substances Directive (RoHS) and the Energy using Product Directive (EuP), as complementary to other European legislation. When in 13 June 2000 the European Commission adopted both the proposal for a Directive on Waste Electrical and Electronic Equipment, and the proposal for a Directive on the Restriction of the use of certain Hazardous Substances in electrical electronic equipment, the purpose announced was the need for regulations designed to tackle the fast increase of the of electrical and electronic equipment waste stream, and to complement European Union measures on landfill and incineration of this type of waste. Since debate first began, the aims for the WEEE Directive were expanded, including the objective of preventing the generation of EEE and promotion of re-use, recycling and other forms of recovery, as a means to reduce the eliminated amounts of such waste. Naturally, the improvement of the environmental performance of economic operators involved in the treatment of WEEE became one of the focus topics. At that time, the Environment Commissioner Margot Wallström acknowledged the electrical and electronic equipment as one of the fastest growing waste streams in the EU as a result of the fast pace of technological innovation, and how particularly important it was ‘to implement the key principles of EU waste management policy, especially the prevention and the recycling of waste, in this area.’¹⁶³

The proposal for a Directive on WEEE has its legal basis supported on Article 192 TFEU (*ex* Article 175 EC) in the citations, and to the Fifth Environmental Action Programme in the recitals. The Fifth Environment Action Programme¹⁶⁴ was launched with an emphasis on the need for an active role of all economic operators involved in the quest for sustainable development. At that moment, the new policy and action on the environment and sustainable development covered specific themes, which also included the ‘Management of Waste’. The focus of the Action Programme on all economic operators involved in the process, and on significant changes in the patterns of development, production consumption and u can be further identified in the WEEE Directive. Public authorities, private and public companies, environmental organisations and, in particular, individuals – as citizens and consumers – are mentioned throughout the articles for the new established procedures proposing drastic changes in all patterns adopted until then.

The report adopted by the Environment, Public Health, Consumer Policy Committee in 24 April 2001 under the co-decision procedure (1st reading) made a large number of amendments to the proposal for a WEEE Directive. The main points approached concerned Separate collection, Costs for historic

163. European Commission, ‘Commission tackles growing problem of electrical and electronic waste’ (13 June 2000) IP/00/602.

164. Fifth Environment Action Programme of the European Union ‘Towards Sustainability – a European Community Programme of policy and action in relation to the environment and sustainable development’ [1993] OJ C138/5.

products, Treatment, Recovery, Information, and Categories, which are further elaborated upon hereafter. In regards to separate collection, whereas the Commission proposed a collection target of 4 kg annually per head and the creation of efficient collection systems, the committee called for all WEEE to be collected separately and for a target of at least 6 kg per head per year. Regarding historic products, whereas the Commission suggested the disposal of products already in existence before the entry into force of the Directive to be financed by all existing producers, the committee wanted the costs for collection, treatment and environmentally sound disposal to be internalised within the product price and for disposal of such products to be financed collectively by all producers in proportion to their share of the market. As far as treatment is concerned, the committee defended the use of state-of-the-art recovery and recycling technologies. However, treatment systems could be set up by producers collectively and/or individually. Recovery: the committee claimed for higher recovery, re-use and recycling targets for 2005, and thus increased the proposed targets by around 5-10%. Information: the committee suggested consumers to be properly informed about the arrangements for ending the disposal of WEEE alongside household waste. Penalties would be imposed on consumers who did not separate WEEE from household waste. Categories of EEE covered: the committee modified some of the categories listed by the Commission. For lighting equipment, it considered it necessary to allow exemptions, such as light bulbs, incandescent lamps and household lighting equipment. It also added leisure and sports equipment to the toys category.¹⁶⁵

As mentioned earlier, the connection between WEEE and RoHS represented a strategic action. The objective of ‘approximating the laws of the Member States on the restrictions of the use of hazardous substances in electrical and electronic equipment and to contribute to the protection of human health and the environmentally sound recovery and disposal of waste electrical and electronic equipment’¹⁶⁶ was based on Article 114 (*ex Article 95 TEC*) of the Treaty on the Functioning of the European Union (TFEU).¹⁶⁷ By developing and establishing simultaneously the Directive on the restriction of the use of specific hazardous substances in electrical and electronic equipment (RoHS) 2002/95/EC and the directive on waste electrical electronic equipment (WEEE) 2002/96/EC, the EU approved measures to provide for

165. European Parliament, ‘Legislative Observatory Summary of vote in committee - 1st reading/single reading’ 24/04/2001 2000/0158 (COD).

166. Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment [2003] OJ L 37/19 (RoHS Directive), article 1.

167. TFEU Art 114 (3) The Commission, in its proposals envisaged in paragraph 1 concerning health, safety, environmental protection and consumer protection, will take as a base a high level of protection, taking account in particular of any new development based on scientific facts. Within their respective powers, the European Parliament and the Council will also seek to achieve this objective.

clear restrictions on the use of hazardous substances in electrical and electronic equipment and, consequently, less harmful e-waste, managed according to predefined instruments and targets. Such requirement for substitution by less harmful substances for those initially used was addressed directly to manufacturers as those were responsible for the most urgent environmental problems caused by disposal and recycling of this waste stream.

Nonetheless, despite of the close link between RoHS and WEEE directives, in the working party's discussion the topic of merging the two Directives arose based on the argument that the decision would provide more successful transposition and implementation processes. A majority of delegations defended the idea of merging the two Directives as it was once, before the Commission's initiative on the processing and disposal of WEEE was split in two Directives with separate legal bases. Article 192(1) TFEU (*ex* Article 175(1) TEC) – environmental protection – in the case of the WEEE Directive, and Article 114 TFEU (*ex* Article 95 TEC) – internal market – for the RoHS Directive. When consulted, the Council Legal Service considered either maintaining the two Directives with their respective legal basis or merging the two proposals on the basis of Article 192(1) alone as valid options. Lastly, the Commission reiterated its preference for a split between both Directives, which was sustained until the final versions of each Directive.

Finally published at the Official Journal in 13 February 2003,¹⁶⁸ the WEEE Directive brought instructions for separate collection of e-waste from the regular waste in order to improve WEEE waste management, with the distinction between separate collection of WEEE from private households and collection from non-households. A relevant concept comes with Article 3(k), when defining WEEE from private households as 'WEEE which comes from private households and from commercial, industrial, institutional and other sources which, because of its nature and quantity, is similar to that from private households'.

Regarding physical responsibility, the Directive did not explicitly identify who should be responsible for setting up infrastructure. However it was required of distributors to accept WEEE from consumers on a one-to-one basis when selling new products. Member States could diverge from such requirement in the case of an existing alternative procedure being available for consumers.

Concerning financial responsibility, producers were made financially responsible for at least collecting from the collection points onwards. An important issue that will be further encouraged at the recast of the Directive, is when MS will receive the guidance to stimulate, when appropriate, producers

168. Directive 2002/96/EC on waste electrical and electronic equipment (WEEE) [2003] OJ 2003 L 37/24 (WEEE Directive).

to finance the costs occurring for collection of WEEE as well from private households to collection facilities.

In addition, the Directive had adopted in its annex IV the symbol for the marking of electrical and electronic equipment, which consists of a crossed-out wheeled bin. The symbol was expected to be printed visibly, legibly and indelibly. The black line under it indicates goods placed on the market after 13 August 2005, as specified in Article 10(3). The goods manufactured before 2005, defined as ‘historic waste’ as mentioned in Article 8(3) were also expected to have the symbol, but without the single black line underneath it.

Although many countries in Europe were already developing a national legal framework for regulating waste management since the 1990s, there was great divergence in the EU, leading to conflicting actions and causing disturbance among the Member States, over most, concerning producers. The putting into place of drafts which came to be the RoHS Directive 2002/95/EC on the restriction of use of specific hazardous substances in EEE, and the WEEE Directive 2002/96/EC on waste electrical and electronic equipment resulted in a necessary step to developing the EU’s legal framework on waste and address these problems. The two directives complemented and reinforced one another.

The European Union (EU) continued to take actions to both prevent the generation of electrical and e-waste, and promote reuse and recycling, along with other forms of recovery. The main goal defined along the discussions for the Directive was of reducing the quantity of EEE waste while also improving the environmental performance of economic operators involved in waste management. Seeking to encourage strategies and actions related to the problem at hand. Article 17 (5) brought the provision for the need of reporting from the Commission to the European Parliament and the Council – within five years after the entry into force of the Directive – referring to the experience of the application of the Directive, particularly regarding separate collection, treatment, recovery and financing systems, as well as if appropriate, to be accompanied by proposals for revision of the relevant provisions of the Directive.

4.4.1 Principles of the WEEE Directive

The WEEE Directive adopted in its recital (2) the application of the principles of prevention, recovery and safe disposal of waste. The emphasis on these concerns had been established in 1993, year when the Community Programme of Policy and Action towards the environment and sustainable development, also nominated as Fifth Environmental Action Programme (as mentioned previously), was published on the Official Journal. The programme had defined WEEE as one of the main waste streams to be tackled for reaching a reduction in wasteful consumption of natural resources and the prevention of pollution. Furthermore, still concerning the prevention, recy-

cling and reuse of waste, the Directive considered in recital (3) the Commission Communication of 30 July 1996 on review of the Community strategy for waste management, which defines the reuse or recovery of waste, in the case that waste generation could not have been avoided. In the same direction, the Council Resolution of 24 February 1997 was also mentioned in the recitals (4) for defending the promotion of waste recovery with the objective of reducing the amount of waste disposal and saving natural resources. Additionally the Resolution of the European Parliament of 14 November 1996 (recital 5) expressed the need for proposals of Directives on specific priority waste streams – WEEE included – based on the principle of producer responsibility.

In order to achieve prevention, reuse, recycling, and recovery of waste electrical and electronic equipment in sufficient levels to ensure environmentally adequate treatment and reduction of the disposal of said waste, the WEEE Directive adopts the Polluter Pays Principle (PPP) in the form of the Principle of Extended Producer Responsibility (EPR). Vedder¹⁶⁹ makes an interesting remark when referring to those principles applied to waste management. There is a close connection between the principle of extended producer responsibility and the polluter pays principle ‘in the sense that the financial responsibility resulting from the polluter pays principle is the primary means to attaining the objective of the principle of producer responsibility. From this perspective the two principles are identical. The producer responsibility principle can in fact be characterised as a specific application of the polluter pays principle to producers only’.¹⁷⁰

The adoption of Extended Producer Responsibility was crucial to economically involve producers with the challenging task of properly producing EEE and treating WEEE. The concern with the design and production of EEE on what refers to end-of-life (EOL) and the development of effective structure and partnerships for retrieving end-of-life EEE from households were a direct effect of the adoption of the EPR in the Directive. Also disposed in Article 4 of the Directive ‘Member States shall encourage the design and production of electrical and electronic equipment which take into account and facilitate dismantling and recovery, in particular the reuse and recycling of WEEE, their components and materials (...)’. This financial responsibility represented another important innovation on how to approach the WEEE problem and reach its origin at the very first stages of the production of EEE. The integration of environmental concern into the development and production process clearly resulted from the new regulation, turning it into a pres-

169. Hans HB Vedder, *Competition Law, Environmental Policy and Producer Responsibility: Experiences in the Netherlands from a European Perspective* (Europa Law Publishing 2002) 3.

170. *ibidem* 9-10.

sure factor for the development of products which should generate less waste after being discarded.

As is the case with all Directives, the WEEE Directive also follows the Principles of Subsidiarity and Proportionality. The subsidiarity principle¹⁷¹ is reflected by the definition of only general requirements. In this sense, Member States are expected to comply with mandatory collection and recycling aims, meaning freedom – and responsibility – for choosing the modalities of the logistics and the organisation of the take-back schemes to be adopted according to their own national possibilities and needs. In the case the MS are not able to achieve the goals; the community is authorised to intervene. The principle also brings the concept of the proximity of power in exercise to the citizen. With respect to the Proportionality Principle, the Directive contains no specified measures to be adopted for achieving the obligations. Only the obligations themselves are defined, since national and local characteristics must be taken into account for the development of separate collection, treatment, recovery and financing schemes.

Observing the national legal frameworks and systems for managing of e-waste newly developed or adapted after the come into force of the WEEE Directive in the MS, in a short amount of time, considerable differences in interpretation and application of the Directive among the Member States could be found. For instance, countries such as Belgium, the Netherlands, Sweden, and Denmark already had defined national regulations and organised management schemes for WEEE previous to the Directive, while others had just implemented legislation, and others were even starting to discuss a national policy. Countries that already had national laws regulating this topic had to adapt those according to the new standards brought by the transposition of the WEEE Directive. At the same time, countries that until then had not established a management system for WEEE started the process nationally, in order to comply with the Directive. The demand for the setup of efficient collection schemes was recognised as a key action, likely to lead to the achievement of the targets set in the Directive, as well as to the development of systems that respect local specificities of culture, geography and industry, and take into consideration existing practices of waste collection.¹⁷²

In short, the new regulation represented an important change for the industry and dynamics of economy. One of the most striking actions of the Directive determined that Member States should ensure that take-back systems and end-of-life electronic and electrical products recycling were developed and implemented by producers. In this sense, the producers became

171. European Parliament, 'European Parliament Fact Sheets' Section 1.2.2 The Principle of Subsidiarity <www.europarl.europa.eu/facts_2004/1_2_2_en.htm> accessed 28 April 2014.

172. Matthew Savage and others, 'Implementation of Waste Electric and Electronic Equipment Directive' in Josefin Lindblom and Luis Delgado (eds.) *EU 25*, European Commission, Joint Research Centre, Institute for Prospective Technological Studies (Office for Official Publications of the European Communities 2006).

financially responsible for the treatment of their waste, and drastic changes in the structure of the market for EEE – as well as the role of producers and other stakeholders connected to this market would have to play – was about to change. However, those were influenced by domestic scenarios and national interpretations of the Directive, producing varied time-schedules, concepts, systems and methods. Even though positive results could be identified, many of such differences were generating administrative burdens and incongruence in interpretations and procedures, a situation identified as in need of adjustments.

4.4.2 Goals

The Directive came into force in February 2003 and focused on specific strategies for reaching a considerable reduction of the disposal of EEE, which was defined as equipment ‘dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields falling under the categories set out in Annex IA and designed for use with a voltage rating not exceeding 1000 Volt for alternating current and 1500 Volt for direct current’. As stated in Article 1¹⁷³ above all, the Directive aimed at preventing waste electrical and electronic equipment. It is interesting to observe that reuse, recycling and other forms of recovery of e-waste were only set as secondary purposes, a decision which expressed the drastic changes the WEEE Directive was looking for. In its provisions, the Directive also determined criteria and targets for a set of different actions. Some of which were separate collection (Article 5), treatment (Article 6), and recovery (Article 7) of waste electrical and electronic equipment. Nonetheless, once studying the provisions more carefully, it is possible to identify more objectives which are interconnected to the ones stated in Article 1, as mentioned hereafter.

i. To Prevent and Reduce Waste Electrical and Electronic Equipment

Article 1 informed the main purposes of the WEEE Directive. The prevention of waste electrical and electronic equipment is recognised as a first priority, but added to reuse, recycling, and other forms of recovery of WEEE, they are composed of the actions necessary to achieve the secondary objective of reducing the disposal of this type of waste. Furthermore, regarding on the provisions of the Directive, those concepts have their definitions stated within Article 3 (c)(d)(e)(f)(g), respectively. Prevention stands for ‘measures aimed at reducing the quantity and the harmfulness to the environment of WEEE and materials and substances contained therein’. Reuse is ‘any opera-

173. Article 1 OJ L 37, 13.2.2003 (WEEE Directive).

tion by which WEEE or components thereof are used for the same purpose for which they were conceived, including the continued use of the equipment or components thereof which are returned to collection points, distributors, recyclers or manufacturers'. And recycling is defined as 'the reprocessing in a production process of the waste materials for the original purpose or for other purposes, but excluding energy recovery which means the use of combustible waste as a means of generating energy through direct incineration with or without other waste but with recovery of the heat'. Recovery is 'any of the applicable operations provided for in Annex IIB to Directive 75/442/EEC', and Disposal through 'any of the applicable operations provided for in Annex IIA to Directive 75/442/EEC'. Still observing the same Article, there was the declared objective to seek for improvement of the environmental performance of all operators involved in the life cycle of electrical and electronic equipment – which included, among others, producers, distributors and consumers, and especially operators directly involved in the treatment of the EEE waste stream.

Europe has observed the importance of re-use of products as having a significant potential to contribute to environmental and resource protection, in particular when it comes to more complex electrical and electronic equipment. Depending on the type and complexity of the product, the amounts of energy saved and greenhouse gas emissions avoided are substantial. Also of great relevance is how it contributes to the reduction of resource consumption and of waste production, as the practice of re-use extends the life cycle of a product. An additional effect of re-use is the positive influence on the job market and, especially concerning a local level, the regional value added, as to this practice local jobs can be created. This applies mainly to used electrical and electronic equipment, in particular for those which have a rather long expected useful life and design or reputation reasons are less relevant – for instance, washing machines or laundry dryers – as well as equipment from brands considered high quality.¹⁷⁴

- ii. *To provide for separate collection of WEEE and free of charge take-back system of end-of-life equipment*

Article 5 determines that MS take appropriate measures to achieve a high level of separate collection of WEEE. The same article also brought an important distinction between WEEE from private households and WEEE as opposed to WEEE from households. Especially focusing on the WEEE originating from households, the article defined different targets and responsibilities for producers and MS concerning the groups of WEEE. By producer, the

174. Thomas Schomerus and others, 'Juristisches Gutachten über die Förderung der Vorbereitung zur Wiederverwendung von Elektro-Altgeräten im Sinne der zweiten Stufe der Abfallhierarchie' (UmweltBundesamt 2014) 17.

Directive understood ‘any person who, irrespective of the selling technique used, including distance communication within the meaning of Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts: (i) manufactures EEE and sells electrical and electronic equipment under his own brand, (ii) resells under his own brand equipment produced by other suppliers, a reseller not being regarded as the ‘producer’ if the brand of the producer appears on the equipment, as provided for in point (i), or (iii) imports or exports electrical and electronic equipment on a professional basis into a Member State.’¹⁷⁵ Additionally, Article 5 instructed MS to ensure the availability and accessibility of the necessary collection facilities for final holders and distributors, and the return of such waste to be at least free of charge. The Directive specified the definition for distributor as ‘any person who provides electrical or electronic equipment on a commercial basis to the party who is going to use it.’¹⁷⁶

The instruments used for pressuring for effective results were the targets set for recovery, reuse, and recycling of different categories of WEEE. Article 7 held producers – or third parties acting on their behalf – responsible for setting up systems to provide for the recovery of WEEE collected separately. The systems could be either on an individual or on a collective basis, and priority should be given to the reuse of whole appliances. Regarding WEEE sent for treatment, MS were supposed to ensure that before the deadline of 31 December 2006 producers would meet clear targets for recovery, reuse, and recycling, specified for each of the ten categories of WEEE defined by the Directive.

iii. *To harmonise the producer responsibility principle in EU for the management of WEEE*

The establishment, through this Directive, of producer responsibility is reflected in the obligation for producers or third parties acting on their behalf, to set up systems to provide for the treatment, recovery, and recycling of WEEE. Since 13 August 2005 (Article 8) producers were also expected to ‘provide at least for the financing of the collection, treatment, recovery and environmentally sound disposal of WEEE from private households deposited at collection facilities’. Financial guarantees on new products placed on the market were included in the provisions in order to ensure producers to become responsible for their products.

175. Article 3(i) OJ L 37, 13.2.2003 (WEEE Directive).

176. *ibidem*.

iv. *To Improve Product Design*

Seeking for prevention of WEEE production and increase of its recoverability and reusability or recyclability, Article 4 called for MS to encourage the design and production of electrical and electronic equipment to facilitate the dismantling and recovery of WEEE (including their components and materials), taking special consideration for the reuse and recycling processes.

4.4.3 Provisions: Instruments and Obligations

The objective of promoting prevention and sound management of European WEEE for reuse, recycling and other forms of recovery could not be achieved in an effective manner without the co-ordination of a Community action on the matter. In that time, a growing number of Member States had already begun to develop national policies and legislation on waste management. But possible differences among those policies and the application of the producer responsibility principle represented a risk to the effectiveness of those policies. For this reason, the provisions brought by the WEEE Directive was intended to form the basis for Member States to start working on similar patterns – once national particularities were observed – for treating waste electrical and electronic equipment within the EU. The Directive provisions, therefore, came to avoid major disparities relating to national actions for tackling the e-waste problem whilst, at that time, still in their initial stages.

i. *Product Design*¹⁷⁷

The Directive made MS responsible for encouraging design and production of EEE in a way that it would consider and facilitate dismantling and recovery, in particular, for the reuse and recycling of WEEE. As written in Article 4 ‘Member States shall take appropriate measures so that producers do not prevent, through specific design features or manufacturing processes, WEEE from being reused’.

The final implementation report of the WEEE Directive¹⁷⁸ identified, in a majority of cases, national laws as successfully formulated to support producers to concentrate on designing products suitable for recovery and recycling, therefore showing, clear compliance with the requirements of the Directive. The report mentions a few examples of the text of Article 4 being used in national laws, as occurred in Bulgaria and Hungary, which required

177. Article 4 OJ L 37, 13.2.2003 (WEEE Directive).

178. European Commission, ‘Final implementation report for the Directive 2002/96/EC on Waste Electric and Electronic Equipment - Preparation of implementation reports on waste legislation, including the Waste Shipment Regulation’ ENV.G.4/FRA/2007/0066 (Consortium ESWI 2012) 15-16.

annual reporting from the producers on measures related to the re-use and recovery in EEE products. Or Lithuania, that demanded information on recycling and re-use of WEEE to be made available to the general public, and the waste management undertakings. Also Germany conferred a special public award for the best actors. Further, Czech Republic stressed the tight link between WEEE and other environmentally related policies (e.g. eco-design). Poland introduced the criterion of 'product utility' to justify the use of substances and materials, as well as production techniques, which are not suitable for reuse or recovery operations. However, even though the reports identified satisfying transposition of the product design provision to national frameworks, the connection between producer responsibility and product design started to be questioned, once collection from households was established by collective schemes and costs were equally distributed among the producers members of the same scheme. This topic will be discussed in more detail further in this chapter.

An important fact to highlight was the permanent concern, since the drafting of the first Directive, for avoiding unnecessary procedures, bureaucracy and, consequently, expenses for producers to follow the provisions. Concerning the topic of product design, this could be observed at the amendments¹⁷⁹ to the proposal. For instance, the definition for 'producer' was amended to take into account the problem of dual branding. The definition was then altered to ensure that companies placing their own brand name alongside the actual producer's name on the product – having, therefore, no influence on its design – would not be included in the definition of producer and have to follow the obligations this position entails.

ii. *Separate Collection Obligations*¹⁸⁰

'To minimise the disposal of WEEE as unsorted municipal waste and to achieve a high level of separate collection of WEEE' was set as one of the main goals of the Directive on WEEE. Member States became responsible for ensuring that separate collection systems were set up and financed by producers to separately collect waste electrical and electronic equipment from end users. Distributors also received the onus of collection, as in a minimum of a one-to-one basis they should accept WEEE from household consumers, when selling their products. This requirement may be deviated from in the event that an equally convenient, alternative procedure for consumers be presented to the national regulators. This means that different channels of

179. European Parliament, 'I Draft Report on the proposal for a European Parliament and Council directive on waste electrical and electronic equipment COM(2000) 347 – C5-0414/2000 – 2000/0158(COD) Rapporteur: Karl-Heinz Florenz, Amendment 10 Article 3 (j) 12.

180. Article 5 OJ L 37, 13.2.2003, 27 (WEEE Directive).

collection to be financed by producers and distributors could be considered, as long as consumers were protected from the costs.

The most used resource for accomplishing separate collection obligations in the MS were municipal collection points, where consumers could return directly their waste equipment free of charge. Another option was kerbside collection, performed either by the municipality or a private organisation on behalf of a producer collection scheme.¹⁸¹ Finally, collection points of the collection schemes should be added to the list, where municipalities could deposit waste equipment collected from households or consumers could return directly their waste equipment free of charge.

*iii. Treatment*¹⁸²

As defined by Article 3(h)¹⁸³ of the Directive, treatment is ‘any activity after the WEEE has been handed over to a facility for depollution, disassembly, shredding, recovery or preparation for disposal and any other operation carried out for the recovery and/or the disposal of the WEEE’. Member States were expected to ensure that producers or third parties acting on their behalf set up systems to provide for the treatment of WEEE. One of the purposes in this Article was for treatment systems to enable authorised treatment facilities to possibly disassemble WEEE according to fixed minimum standards to facilitate reuse and recycling of components or whole appliances, or to recover and/or reuse and recycle WEEE according to clear targets.

In addition, it was the intention to arrange for recyclers to obtain sufficient material for large-scale production and their economic viability. At the same time, also to arrange for the possibility for treatment operations to be undertaken outside the Member State where it was generated or even outside the Community. For this last possibility the shipment of WEEE should be in compliance with the Council Regulation No 259/93 of 1 February 1993 (in force at that time) on the supervision and control of shipments of waste within, into and out of the European Community.¹⁸⁴

The recovery and recycling/reuse rates of WEEE measure the efficiency of treatment of WEEE. It is the correlation between recovered and recy-

181. For instance, Philips has been at the forefront of setting up producer collection schemes, starting in the Netherlands in the late 1990s. See more at ‘Closing the materials loop’. For more see

<www.philips.com/about/sustainability/oureenvironmentalapproach/greeninnovation/closingthemataterialsloop.page> accessed 25 June 2014.

182. Article 6 OJ L 37, 13.2.2003, 28 (WEEE Directive).

183. *ibidem* Article 3(h).

184. Council Regulation (EEC) No 259/93 on the supervision and control of shipments of waste within, into and out of the European Community [1993] OJ L 30/1. Repealed by Regulation (EC) No 1013/2006 on shipments of waste [2006] OJ L 190/1.

cled/reused amounts versus the total amount of WEEE that has been treated, not the total amount of EEE put on the market.¹⁸⁵

Table 4.1 Targets overview WEEE Directive 2002/96/EC

Equipments categories	Recovery Target (average weight per appliance)	Recycling and Reuse Target (average weight per appliance)
1. Large household appliances	80%	75%
2. Small household appliances	70%	50%
3. IT and telecommunications equipment	75%	65%
4. Consumer equipment	75%	65%
5. Lighting equipment	70%	50%
6. Electric and electronic tools (except large-scale stationary industrial ones)	70%	50%
7. Toys, leisure and sports equipment	70%	50%
8. Medical devices (except implanted and infected products)	-	-
9. Monitoring and control instruments	70%	50%
10. Automatic dispensers	80%	75%
Gas discharge lamps	-	80%**

** Article 7(4) defined for the European Parliament and the Council, acting on a proposal from the Commission, to establish new targets for recovery and reuse/recycling, inclusive for the reuse of whole appliances and for the products falling under category 8 of Annex IA, by 31 December 2008.*

***Target specified only for recycling.*

185. Regarding WEEE sent for treatment in accordance with Article 6, Member States shall ensure that, by 31 December 2006, producers meet the following targets: (a) for WEEE falling under categories 1 and 10 of Annex IA, — the rate of recovery shall be increased to a minimum of 80 % by an average weight per appliance, and — component, material and substance reuse and recycling shall be increased to a minimum of 75 % by an average weight per appliance; (b) for WEEE falling under categories 3 and 4 of Annex IA, — the rate of recovery shall be increased to a minimum of 75 % by an average weight per appliance, and — component, material and substance reuse and recycling shall be increased to a minimum of 65 % by an average weight per appliance; (c) for WEEE falling under categories 2, 5, 6, 7 and 9 of Annex IA, — the rate of recovery shall be increased to a minimum of 70 % by an average weight per appliance, and — component, material and substance reuse and recycling shall be increased to a minimum of 50 % by an average weight per appliance; (d) for gas discharge lamps, the rate of component, material and substance reuse and recycling shall reach a minimum of 80 % by weight of the lamps.

iv. *Recovery*¹⁸⁶

According to Article 3(f) of the Directive¹⁸⁷ ‘any of the applicable operations provided for in Annex IIB to Directive 75/442/EEC’. Member States were expected to ensure that producers or third parties acting on their behalf set up systems – either on an individual or on a collective basis – to provide for the recovery of WEEE. Article 7 established the deadline of 31 December 2006 for Member States to ensure that producers would meet the following targets defined to be applied to WEEE sent for treatment in accordance with Article 6.

- (a) for WEEE under categories 1 and 10 of Annex IA of the Directive, the rate of recovery should be increased to a minimum of 80% by an average weight per appliance, while component, material and substance reuse and recycling should be increased to a minimum of 75% by an average weight per appliance;
- (b) for WEEE under categories 3 and 4 of Annex IA, the rate of recovery should be increased to a minimum of 75% by an average weight per appliance, while component, material and substance reuse and recycling shall be increased to a minimum of 65% by an average weight per appliance;
- (c) for WEEE under categories 2, 5, 6, 7 and 9 of Annex IA, the rate of recovery should be increased to a minimum of 70% by an average weight per appliance; while component, material and substance reuse and recycling shall be increased to a minimum of 50% by an average weight per appliance;
- (d) for gas discharge lamps, the rate of component, material and substance reuse and recycling should reach a minimum of 80% by weight of the lamps.

v. *Producer Responsibility*¹⁸⁸

As defined by OECD, Extended Producer Responsibility is ‘an environmental policy approach in which a producer’s responsibility for a product is extended to a post-consumer stage of such product’s life cycle, including its final disposal’.¹⁸⁹ In the same direction, with regard to waste European environmental law increasingly adopts the principle of extended producer responsibility.¹⁹⁰ With the come into force of the Directive on end-of-life vehicles, the principle of producer responsibility was implemented for the first time. Producer responsibility was then extended, also to include the so-called post-

186. Article 7 OJ L 37, 13.2.2003, 29 (WEEE Directive).

187. *ibidem* Article 3(f).

188. Article 8 OJ L 37, 13.2.2003, 30 (WEEE Directive).

189. OECD, ‘Extended producer responsibility: a guidance manual for governments’ (OECD 2001) 9.

190. Also referred to as ‘producer responsibility’.

consumer phase and to hold producers responsible for the impacts of their products once those reach the end of their lifetime.

At the occasion of the proposal for a WEEE Directive the Commission stated in its explanatory memorandum what would become the base to a more elaborated statement: ‘This financial or physical responsibility creates an economic incentive for producers to adapt the design of their products to the prerequisites of sound waste management.’¹⁹¹ Further, article 8(2) of the European WEEE Directive established individual producer responsibility for the recycling of products put on the market after 13 August 2005. The measure that made each producer responsible for financing the end-of-life costs of their own products (by ‘producer’ one should consider ‘a brand name on the product or the importer of the product’). Producers were allowed to form a collective system to fulfil those obligations, if not doing so individually, and were prohibited from using design features that prevent products from being reused unless such features provided overriding safety or environmental benefits.

The principle – and paradigm – of individual producer responsibility was expected to become a significant competitive incentive for producers to design products that would be easier, and consequently, demand low-cost recycling procedures, and was seen as an essential tool in compelling producers to keep in mind the end-of-life management of their products. With that, and by modifying product design, a producer could directly influence the cost of recycling and reusing his product.

vi. *Financing Systems*¹⁹²

The Directive initially held producers responsible for the financing of the collection, treatment, and environmentally sound disposal of WEEE originating from households and non-households. However, the concern from the industry over the impact of retroactive financial responsibility of historical non-household WEEE was soon recognised by the Commission, once considerable changes at the market share structure on EEE resulted in great amounts of orphaned products. Not long after the WEEE Directive was issued, Directive 2003/108/EC came to amend Article 9 regarding the financing of WEEE from users other than private households. Producers were then made responsible – with respect to historical non-household WEEE – in the case new products were being supplied, on an old-for-new basis.

Thus, requirements established for producers supplying EEE to non-household end-users (Business to Business or B2B) were considerably differ-

191. Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment COM(2000) 347 final — 2000/0158(COD) OJ C 365 E/184, explanatory memorandum.

192. Articles 8 and 9 OJ L 37, 13.2.2003, 30 (WEEE Directive).

ent from those for producers supplying EEE to households (Business to Consumers or B2C). Beyond the procedure for historic waste just mentioned, producers of B2B EEE were required to provide for the financing of the costs for the treatment, recovery and environmentally sound disposal of WEEE from users other than private households, for products put on the market after 13 August 2005. On the other hand, producers of B2C were required to be responsible for the financing of at least the treatment, recovery and environmentally sound disposal of the waste from his own products deposited at collection facilities, for products put on the market later than 13 August 2005.

Furthermore, the Directive specified a provision for ensuring operations of collection, treatment, recovery, and disposal of WEEE to be financed. It defined that each producer was responsible for providing a financial guarantee for recycling, if a product to end-user consumers (B2C) after 13 August 2005 was placed on the market (Article 8 (2)). The financial guarantee was considered of major importance to avoid compliant producers having to finance the recycling of ‘orphan’ products from producers who no longer existed. A few forms of financial guarantee adopted were recycling insurances, blocked bank accounts, participation in compliance schemes for the financing of the management of WEEE, among others. Within the European model, the prevailing option accepted as a guarantee by the government has been the participation in a compliance scheme. Some of the strengths of this option consists on the decrease of the burden on producers – to a certain extent – as no increase is needed on the price of EEE and the number of ‘free-riders’ becomes smaller.

vii. *Compliance Schemes*¹⁹³

As disposed by Article 5 (2)(c) ‘(...) producers are allowed to set up and operate individual and/or collective take-back systems for WEEE from private households provided that these are in line with the objectives of this Directive’. Producer responsibility organisations, also defined as ‘compliance schemes’, stand for organisations which, on behalf of the producers, take over the operational responsibility of the management of the take-back and recycling systems. Those can be classified in three main groups.¹⁹⁴

1. **Collective multi-sector compliance schemes.** Organisations with a large number of producers’ memberships, reaching across two or more product categories. A few examples are NVMP in the Netherlands, El-Kretsen in Sweden, and SWICO in Switzerland. As an advantage, collective schemes deliver economies of scale once they are involved with the organisation of the collection, transport, and recycling of WEEE. On the

193. *ibidem* Article 5.

194. Deepali S Khetriwal and others (n 162), 957.

other hand, there has been criticism on the fact that those are usually monopolies in their markets, resulting in uncompetitive performance and cross-subsiding products from one category to another

2. **Collective single-sector compliance schemes.** Compliance schemes focusing in only one product category. For instance, ICT Milieu in the Netherlands, which works with information and communication technology products, and SLRS in Switzerland, which deals with lighting. Those provide economies of scale at a certain level
3. **Individual brand-based compliance schemes.** Mostly adopted by large companies owners of strong brands. Arguments for this type of compliance scheme are the possibility to negotiate better prices with their recycling suppliers, to protect the brand image, and to have feedbacks for design improvement. Due to substantial operational challenges, as well as prohibitive costs for brand-based sorting and collection of household WEEE, these schemes remain largely focused on business consumers. A considerable number of those individual take-back brand-based schemes can be identified on the market, as Cisco, Ericsson, and Dell, to mention a few.

viii. *Development of new technologies for recovery, recycling, and treatment*¹⁹⁵

Article 7 of the Directive indicated that Member States should encourage the development of new recovery, recycling, and treatment technologies. According to report evaluations the majority of Member States were able to implement measures such as funds, governmental subsidies, knowledge networks, awareness raising campaigns, and programmes for research and development.

ix. *Information and Reporting based on a national register of producers*¹⁹⁶

The highlights for the information and reporting procedures defined by the Directive where the periodicity of two-yearly basis for MS to transmit the information required to the Commission and a first three-year report covering the period from 2004 to 2006. MS were also designated to develop a register of producers in their territory, and to collect information – on an annual basis – about the quantities, and categories of electrical and electronic equipment put on the national market, collected, reused, recycled, recovered, and exported as waste.

195. Article 7 OJ L 37, 13.2.2003, 29 (WEEE Directive).

196. *ibidem* Article 12.

x. *Inspection and Monitoring*¹⁹⁷ and *Penalties*¹⁹⁸

As brought by Article 16 of the Directive, ‘Member States shall ensure inspection and monitoring enable the proper implementation of this Directive to be verified’. Additionally, the provision on Article 15 requested MS to establish effective, proportionate and dissuasive penalties, which should be applicable to possible breaches of the national provisions to be adopted according to the terms of the WEEE Directive. Some years later – in December 2008 – when the first draft of the recast proposal of the WEEE Directive would be issued by the European Commission, the enforcement of the Directive will be identified as one of the problems related to the application of the WEEE Directive.

xi. *Transposition*¹⁹⁹

Article 17 of the Directive specified the date of 13 August 2004 for the Member States to bring into force the laws, regulations, and any administrative provisions necessary in the field covered by the Directive. The fulfilment of these provisions should be immediately informed to the Commission.

4.4.4 Successful Instruments

Besides the difficulties of the MS to implement some of the provisions of the Directive, and the critiques generated by those issues, which would be approached by the recast in 2012, the Directive brought essential instruments for an integrated product policy in the EU concerning EEE. It can be noticed that despite the challenges presented during the process of transposition and implementation of the Directive, the following instruments and strategies proved to be crucial for the success of the goal of improving the environmental performance of recycling, reuse, and other forms of recovery of Waste Electrical and Electronic Equipment.

‘Where local authorities have been engaged in the design and implementation of national systems, existing waste infrastructure used and defined roles established for producers and local authorities, results have been significantly more positive than in the cases where local authorities have had limited engagement.’²⁰⁰

197. *ibidem* Article 16.

198. *ibidem* Article 15.

199. *ibidem* Article 17.

200. Rachel Cahill, Sue M Grimes and David C Wilson, ‘Extended producer responsibility for packaging wastes and WEEE – a comparison of implementation and the role of local authorities across Europe’ (2010) 29(5) *Waste Management & Research* 455-479, 478.

The WEEE Directive and, along with it, the extended producer responsibility were evaluated by the reports as successfully implemented across Europe in terms of achieving the targets defined by the Directive. An important reason for this success was identified to be the role played by local authorities in that process. EU experience reveals, for instance, the importance of municipal collection points. Countries where local authorities were mostly engaged with this, among other actions, presented the most positive results.

i. Extended Producer Responsibility, Financial guarantee and Compliance Schemes

The EPR can be traced back to the German Ordinance on the Avoidance of Packaging Waste (1991), which led to a successful experience decoupling consumption of packaging from economic growth, and encouraged this policy to be replicated.

Certainly one of the greatest contributions of the directive on an international level was the empowerment and effective use of the Extended Producer Responsibility (EPR), an expansion from the polluter pays principle deeply enshrined in the TFEU (Art 191).²⁰¹ When observing the proposal for the Directive, there is a clear link between the principle of producer responsibility and the polluter pays principle. Inferring from the discussions along the process for approval of the WEEE Directive, the Commission identified the producers as agents of change, since they are considered the only ones able to reduce the environmental pollution once their products are scrapped. Here lays the link between the polluter pays principle and the principle of producer responsibility.²⁰² According to the WEEE Directive, Member States should encourage producers to design electrical and electronic equipment in order to minimise the disposal of WEEE as unsorted municipal waste, and to facilitate dismantling, reuse or recycling. In this context, Member States were also held responsible for establishing separate collection systems for this waste stream.

Still based on the principle of producer responsibility, producers were tasked with the organisation of the financing of the system by means of either 'individual' or 'collective systems', including the financing of historical waste. Once the systems implemented in the MS were observed, the choice for the compliance scheme to fulfil the financial guarantee requirement for new WEEE had clearly been the most frequent option. These financing systems were also meant to encourage producers to adapt the design of their products to environmentally-sound waste management, a strategy later re-

201. Article 191 of TFEU (ex Article 174): 'Community policy on the environment shall (...) be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay'.

202. Vedder (n 169) 16.

ported as having its efficacy compromised by the collective nature of most of European compliance schemes for WEEE from households, as discussed later in this chapter (the topic on Product Design).

Referring to financial responsibilities over the EEE waste stream, a crucial difference must be noticed. Historical WEEE differs from regular WEEE based on a method adopted for the financing of the historical WEEE. According to the Directive, exclusively for the financing of historical WEEE from households, producers were allowed to charge household consumers a visible fee actually equivalent to the costs from dealing with historical WEEE. Differently, for new WEEE (produced after 13 August 2005), producers were expected to finance waste from their products and were not authorised to make the fee visible to the consumers. The 2006 report on the implementation of the Directive²⁰³ described the support of many producers to the option given in the Directive (Article 8 (3)) to indicate to consumers the costs of recycling historical waste for a period of eight years – ten years in the case of large household appliances – in the form of a ‘visible fee’, i.e. a separate part of the product price. The option for a visible fee proved to be a preference to various producers, as a mandatory visible fee provided ‘some cushion against the impact that the Directive might otherwise have’. In fact, it was noticed that whenever a visible fee would not be mandatory, it had the tendency to be absorbed into the product price, consequently, a cost that, in the short term, would be borne by the producer, as consumer electronics is quite a price-sensitive-competitive-low-margin market. It is furthermore important to mention the temporary conditions for the visible fees that had been authorised by the Directive, and specifically for historical waste, as for new WEEE the producers should finance themselves the costs from collection, treatment, recovery and environmentally sound disposal of WEEE. A few years later, the recast Directive would bring new provisions on this topic.

ii. *Specific targets*

By examining the procedures of the proposal for the WEEE Directive, intensive debates can be found where divergent opinions discussed about the most appropriate targets which would be reasonable and, at the same time, of great impact on reducing the amount of WEEE sent to landfills. The figures finally defined, as known from the final version of the WEEE Directive, were agreed by the end of the procedure, as ever since the Commission’s proposal, specific targets had been included. The database for statistics from the EU played an important role. However, due to the scarce and voluntary data provided by the MS referring to disposal of waste – a reality until the late 90’s – advances to the system were proven to be necessary.

203. Matthew Savage and others (n 172) xiii.

Further in the implementation stage, the figures and percentages established as targets for separate collection and treatment proved to be more or less possible according to specific economic, political, and structural conditions of the MS in consideration. One aspect of this matter could be pointed to have had, still in the Directive provisions, its initial referral on what concerned deadlines for the transposition of the Directive. For instance, in Article 17 Greece and Ireland were authorised to increase the periods referred to in Article 5(5) by up to 24 months due to their overall recycling infrastructure deficit, geographical circumstances, low population density, and low level of EEE consumption.

iii. Separate Collection Obligations

The average rate established for separate collection from private households of WEEE by December 31, 2006 was of at least 4 kg per person per year. In the same direction, in order to enhance the results of WEEE collection, recital 21 stressed the importance of information to users about the requirement not to dispose of WEEE as unsorted municipal waste, to collect WEEE separately, and about the collection systems and their role in the management of WEEE. Not only physically responsible for collecting end-of-life EEE on the one-to-one basis when selling a similar product, distributors also were given the informative responsibility for notifying consumers about the return procedures to the producer (Article 5 (b)). Moreover, as defined in Article 3 (i), producers were expected to provide or to join a Producer Compliance Scheme using the best available treatment, recovering and recycling techniques. The measure should lead producers and environment agencies, along with other services, to work together in order to achieve an effectively and economically viable treatment, recovery or recycling process.

As an overall perspective, when enquired for the final implementation report about the establishment of WEEE collection systems as foreseen in Article 5 of the WEEE Directive 2002/96/EC, all Member States confirmed to have established systems enabling holders and distributors to return WEEE at least free of charge in accordance to Article 5 of the Directive.²⁰⁴ The take back system on one-to-one basis is satisfactorily accepted by the public and producers. Despite that across Member States there existed differences referring to the collection systems and responsibilities, common points for collection of WEEE still could be identified as electrical retailers, civic amenity sites, and own take-back systems operated by EEE producers, which would all be finally served by ‘producer compliance schemes’.

204. European Commission 2012 (n 178) 32.

iv. *Information and Reporting*

As explained by Hofmann, Rowe and Türk ‘joint administration often also calls for permanent or at least recurring provision of information (...). Due to a lack of general competence in the Commission to request information from the Member State authorities, the legal basis of reporting duties is generally the principle of sincere cooperation under Article 4(3) TFEU (Article 10 EC)’,²⁰⁵

Article 12 defined the responsibility for Member States to prepare a register of producers, and collecting, on an annual basis, information on the quantities, and categories of EEE that were put on the market, collected, reused, recycled, and recovered within their territory, as well as exported collected waste. Even further, every three years the MS were expected to send to the Commission a report on the implementation of this Directive (first three-year report covered the period from 2004-2006).

4.4.5 **Transposition and Implementation Issues**

The European Union’s Waste Electrical and Electronic Equipment Directive in 2003 had essentially two main concerns: to prevent WEEE and, when prevention would not be possible, to ensure it would be collected and treated in an environmentally sound manner, protecting the environment and human health from its hazardous substances. Based on these concerns, the Directive defined a common minimum legislative framework for all EU Member States. Yet, the transposition of the Directive into national legislations revealed considerable differences in the transposition process and, hence, in the implementation models. There were 27 national transpositions of the Directive, each of them containing different definitions, agreements, and obligations. The work from Huisman *et al* provides the surprising figure of more than 150 different compliance schemes as a result of 27 different pieces of legislation. Consequently, the processes of transposition and implementation of the WEEE Directive to national legislations received complaints and criticism from the different stakeholders involved, particularly producers, as the ones most affected by the provisions brought by the Directive.²⁰⁶

The implementation process also lead to worrisome differences amongst producers, governments, retailers, recyclers, compliances schemes, and other stakeholders involved. For instance, one of the main issues was the difficulty producers and recyclers operating on the EU market faced when following

205. HCH Hofmann, GC Rowe and AH Türk, *Administrative Law and Policy of the European Union* (Oxford University Press 2011) 417.

206. Jaco Huisman and others, ‘Lessons from the 2008 WEEE Review Research Studies’ in *Proceedings of the Electronics Goes Green 2008* (Conference Record September 2008) 956.

the many obligations that had to be fulfilled in each MS. Moreover, different requirements concerning the need to set up financial guarantees, and the uncertainty for the use of the Advanced Recycling Fee (ARF), lead to asymmetry in the compliance cost across industry sectors, and potential competition distortion.²⁰⁷

The cause for differences in the transposition processes has been mostly credited to Article 192 and its ‘minimum requirement principle’ in Article 193 TFEU (*ex* Article 176 TEC) ‘The protective measures adopted pursuant to Article 192 shall not prevent any Member State from maintaining or introducing more stringent protective measures. Such measures must be compatible with the Treaties. They shall be notified to the Commission.’ As a reflex from this principle, the transposition process of Directive 2002/96/EC was shaped according to the Member States own perceptions, influenced by national situations, which could vary from legislative history, legal system, lobby groups influence, economic context, geographical considerations and concurrent national priorities. The implementation reports on the Directive, despite of the transposition differences, still revealed an overall positive result, as considerable changes had been made towards the target defined in the Directive. Nonetheless, the reports also identified major issues that should be tackled by the future recast of the directive. The most evident problem signalled by the reports was the diversity of interpretations in national legislations, due to the compliance and enforcement problems it had been causing, and would be intensively discussed in the future.

Achieving an effective development of WEEE management in the EU proved to be possible only if measures for equalising the issues mentioned above were taken into action. Different national policies on the management of WEEE with the EU were, beyond from preventing a coherent European policy, also obstructing each other’s performance and creating unnecessary administrative burdens. For instance, producers were facing the existence of different national registration, and reporting requirements. For this reason, the European Council recognised the need for harmonising the national policies as a way of ensuring policy effectiveness.

Another aspect to be observed, relates to the mentality of the time when most of the WEEE Directive was drafted. In the late 90’s, the concerns were to ‘protect the environment’ by making large use of the Extended Producer Responsibility principle, and strongly investing in the Product Design as a core strategy to provide for better recycling rates. As an effect over the aforesaid, the central environmental strategies of the WEEE Directive were established on weight based recycling targets, a collection amount of 4Kg per

207. Jaco Huisman and Federico Magalini, ‘Compliance Key Factors of the EU WEEE Directive - How far is one from a full implementation?’ (Proceedings of the 2006 International Symposium on Electronics and the Environment in San Francisco May 2006).

inhabitant regardless of the MS, and an origin oriented list of categories to be applied.

After three years gathering and analysing information provided by stakeholders and Member States (MS), in 2008, the Commission published the 'Summary on Impact Assessment'²⁰⁸ accompanying the proposal for the recast of the WEEE Directive. The document addressed the problems concerning the WEEE directive in two main topics: effectiveness and efficiency. Problems with the effectiveness were represented by a growing percentage of WEEE being treated in the EU without the due environmental care, or illegally shipped to developing countries, where valuable materials would be recycled by procedures that endanger public health and the environment, or would be simply dumped. Among the unnecessary costs identified in the operation of the Directive, the most significant ones were the uncertainty relating to its scope, and requirements for producers to register and report in each and every Member State where their products are sold.

In 2008, a review of the Directive reported that, even though EU specific regulations had been in force since August 2004, and electrical and electronic waste had been collected in greater quantities, only one third of it was reported to be treated accordingly, while the rest remained being sent to landfills or sub-standard treatment sites, often outside the European Union. The legislation on the electrical and electronic equipment waste stream had proved difficult to fully implement and enforce both by public authorities and market actors. As stated in the 2008 Review of Directive 2002/96 'Difficulties with the implementation arose as a result of the complexity of involving all relevant stakeholders actively, and agreeing on responsibilities. These difficulties have contributed to delays in the legal transposition and practical implementation of the Directive.'²⁰⁹ For those reasons, the European Commission decided to recast the WEEE directive by addressing the difficulties identified during the transposition and implementation process of the first Directive.

i. Existence of previous national legislation

In order to fully understand the implementation process of the Directive, a major distinction must be made regarding the previously existing legislation, and take back structures in some of the Member States. On one side, there were countries which, previous to the come into force of the WEEE Directive, already had a working system for managing WEEE. Some of these

208. European Commission, 'Staff working paper accompanying the Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast) Summary of the Impact Assessment' COM(2008) 810 final.

209. United Nations University (UNU), '2008 Review of Directive 2002/96 on Waste Electrical and Electronic Equipment (WEEE)' Contract DG Environment (5 August 2007) <http://ec.europa.eu/environment/waste/wEEE/events_wEEE_en.htm> accessed 12 November 2014.5.

countries were Belgium, Netherlands, and Sweden. On the other side, there were countries that, by the time the Directive was published, had no system for recycling or reusing waste. As described by the implementation report in 2006,²¹⁰ the national legislations regarding WEEE collection, recycling, and take-back structures previous to the WEEE Directive were of important influence in shaping the Directive itself. In those countries, the pre-existing rules to deal with WEEE had to suffer some changes to include concepts and procedures such as individual producer responsibility, labelling, financial guarantees, and recycling and collection targets, brought by the Directive. Nevertheless, except of Denmark, the changes needed to fulfil the requirements of the Directives were not substantial. They were rather complementary, and far simpler to be applied than the 'standing start' implementation faced by countries which had no pre-existing legal provisions to approach the waste management matter. Still according to the report, countries that approached the Directive with no background of WEEE management faced much deeper difficulties for the development of the necessary legal and operational infrastructures required to meet the deadlines established in the Directive, if compared to the ones which already had implemented an e-waste system.

Currently, two distinct frameworks for operations can be identified among the Member States, with some minimal variations. Those are the single national compliance scheme model (monopoly), and the competitive clearing house model. The single national compliance scheme is an approach usually adopted in countries where the WEEE management systems have been established for the longest, possibly, even previous to the WEEE directive, as it is the case with Belgium, Switzerland, and Sweden. This framework is represented by a dominant national producer responsibility organisation which, on behalf of producers, assumes the responsibilities of organising the collection, transportation and recycling of WEEE. Those are mostly non-governmental, not-for-profit companies owned by one or more trade associations.

The clearing house model, on the other hand, implies that producers, in most cases, should register with a government-managed clearing house (a central national coordination body) and report products put on the market. It is the clearing house that, based on the market share of the producer, assigns the collection obligation and financing responsibility for each of them directly, or as part of a compliance scheme. In this system, multiple partners as producers, recyclers and waste organisations can provide services, avoiding a monopoly and reducing costs. Most of the Member States have adopted the

210. European Commission, 'Implementation of the Waste Electric and Electronic Equipment Directive in the EU - Technical Report Series' Directorate-General Joint Research Centre Institute for Prospective Technological Studies (Office for Official Publications of the European Communities 2006) 9.

clearing house approach; some examples are France, Germany, Spain and UK. This model has been mostly successful in bigger countries, where the economies of scale are more efficient in a collective approach. A common variation of this model is seen in the arrangements for WEEE collection which can be made privately by producers or their compliance schemes. Those are then 'balanced at the end of each year with the required WEEE obligation on a market for tradable WEEE collection notes.'²¹¹ Although this market-based framework is known for its extra operational costs, in order to avoid 'cherry-picking' by the compliance schemes and, therefore, to prevent not easily accessible WEEE from remaining uncollected, it is still frequently adopted.

ii. *Deadlines for transposing the provisions to national legislation and consultation with stakeholders*

In the Member States, the process of developing legislation for the transposition of the provisions specified in the Directive was strongly troubled by the contradictory views of producers concerning how the Directive should be implemented. Consequently, the Member States were driven to adopt some form of consultation as national legislation and compliance models were being developed. However, to reach from an agreement amongst producers as to the desired legislation proved to be quite a challenging task. The MS were facing struggles between those stakeholders pushing for national compliance organisations, and those pushing for a more market-based approach, incorporating a clearing-house model. Countries with a strong Chamber of Commerce and tradition of centralised and collaborative decision making tended to have producers presenting a united negotiated position to the government after resolving such issues amongst themselves. But a general complaint presented both by national authorities and producers referred to the uncomfortable position of having to make fast, important decisions while not enough data was available to lead to a clear understanding of the consequences of different approaches, or even to properly evaluate the options.

iii. *The scope of the Directive*

The scope defined by the WEEE Directive in its Article 2 and Annexes IA and IB established a list of categories of electric and electronic equipment by type, and provided illustrative examples, according to each of the categories. However, studies²¹² over the implementation process of the directive revealed that, in practice, treatment is performed on the basis of material composition,

211. Deepali S Khatriwal and others (n 162) 954-962, 958.

212. For this topic see generally: United Nations University, '2008 Review of Directive 2002/96 on Waste Electronic Equipment Final Report' (UNU 2008).

instead of on the basis of appliance use. Most of the collection schemes collect in a range of five groupings, which in reality reflect the treatment of WEEE with a focus on its composition and the economies of scale achieved during the collection stage. The observed adopted divisions in practice were identified as: Large equipment (categories 1 and 10 from the Directive); Cooling appliances (category 1); Small appliances (categories 2,3,4, 5A, 6,7,8,9); Cathode Ray Tube (categories 3,4); and Lighting Lamps (category 5B). Some variations besides this were observed according to different MS.

iv. *Administrative Burdens*

One of the most recurrent criticisms over the WEEE Directive was the administrative burden which resulted from differences existing among MS legislation, and their individual understanding of concepts, registration procedures, and categories, among others. The producers were both, the mostly affected stakeholder by the Directive and, consequently, by its divergent transposition and implementation in each of the Member States. The different definitions and classifications causing administrative burden were identified as the ones relating to B2B and B2C; definitions for producer, distributors' involvement; legal aspects related to registration; inconsistencies across MS; equipment categorisation; and frequency and level of detailing made necessary for reporting.²¹³

v. *Financial and Operational Responsibilities*

The development and transposition of WEEE legislation received an active involvement from producers, mainly by means of discussions with national governments and industry associations. This behaviour was mostly noticed in countries which WEEE management structures and legislation were not present or fully established previous to the Directive, considering that those circumstances enabled more room for influencing the legislative and systemic development of a waste management policy and structure. On the other hand, in countries where a management system was well developed, usually adopting a collective system, the majority of producers had accepted the system brought by the Directive without major reluctance.²¹⁴ But finding an agreement on the financial and operational roles and responsibilities of actors in the WEEE supply chain proved to be considerably difficult. Although it was clear that producers had the responsibility for collection and treatment of WEEE, the same did not occur when deciding up to which point municipalities and retailers, among others that manage the channels for the return of WEEE, also would or could have financial and operational responsibilities.

213. *ibidem* 125.

214. European Commission 2006 (n 210).

vi. *Information and Reporting*

Although the putting into place of a national register of producers was successfully accomplished by the majority of MS, the expression in figures of collection and recycling statistics of the actual amount of e-waste collected and recycled proves to be a challenging task. The main reason is due to the involvement of far more actors than the ones initially considered by the extended producer responsibility. The fact that only producers, or third parties acting on their behalf, were obliged to fulfil the requirements of registering and reporting resulted in volumes of waste collected and recycled by actors outside the EPR systems often not being included in the reports sent to the European Commission. The lack of reporting from recyclers, waste collectors, local authorities and traders of all e-waste flows meeting the minimum treatment standards resulted into inaccurate data reported to the Commission.

vii. *Inspection and Monitoring*

As part of the WEEE review process, the European Commission performed an extensive analysis which identified problems related to the enforcement of the WEEE legislation. As a conclusion the Commission reported: 'there are no detailed enforcement requirements in Directive 2002/96/EC which result in lack of enforcement of the WEEE Directive in Member States'. Great concerns arose relating to the appropriate inspection and monitoring to verify the information reported by producers, the operations performed at treatment facilities, and the proper implementation of the WEEE Directive on what relates to shipments of WEEE exported outside the Union.

viii. *Agreements between competent authorities and the economic sector*

Article 17(3) of the WEEE Directive 2002/96/EC stated that Member States could transpose the provisions set out in Article 6(6), 10(1), and 11 by means of agreements between the competent authorities and the economic sector concerned. However, unlike most of the actions set by the Directive, a majority of countries answered negatively when asked in the final implementation report about the existence of any agreements established with the economic sector. Only eight confirmed to have performed such agreements, against 21 negative answers.²¹⁵

215. European Commission, 'Final implementation report for the Directive 2002/96/EC on Waste Electric and Electronic Equipment - Preparation of implementation reports on waste legislation, including the Waste Shipment Regulation' ENV.G.4/FRA/2007/0066 (Consortium ESWI 2012) 8.

ix. *Summary*

The financial burden for collection, recovery, recycling, treatment, and disposal of collected WEEE from local authority locations was directed to producers, by the Member States. However, concerning the collection of households, the share of physical and financial responsibilities divided between producers, and local authorities varied among countries. A consensus brought by the legislators in the Member States and published in the first implementation report of the WEEE Directive in 2006²¹⁶ made clear that not only adopting a single legal and operational approach throughout all EU members is of great importance, but also building systems able to meet local specifics of culture, geography and industry, and that take into consideration existing practices of waste collection. Certainly a structure minimally similar in policies and rules would be the ultimate goal to be achieved, however, in order to allow changes to become economically and socially viable, national specificities proved to be a relevant element. At the same time, the report informed a general propensity from individual producers to eventually develop Pan-European compliance schemes as an option to create efficiencies at an EU level. Such schemes were seen as possible paths to lead to an evolution and consolidation of the WEEE take back market and deliver efficiency gains which could benefit customers and bring positive impacts on the environment as a result from technology investments enabled by economies of scale and optimisation in transport. A few years later, this prediction would be confirmed by the establishment of a Pan-European compliance scheme for WEEE, the European Recycling Platform (ERP).

The analysis of the reports from the processes of transposition, and implementation of the WEEE Directive in each of the Member States revealed difficulties originating from causes ranging from doubtful concepts, and unclear possibilities for national frameworks, to the need for electronic waste policies to serve more environmental objectives than initially conceived. The recovery of valuable materials, a more practical categorisation of equipment, and energy preservation were some of the topics still not covered by WEEE legislation which should be added to the primary focus of establishing control over toxic substances. Those represented a series of issues which should be addressed by the recast of the Directive a few years later.²¹⁷

216. European Commission, 'Implementation of the Waste Electric and Electronic Equipment Directive in the EU - Technical Report Series' Directorate-General Joint Research Centre Institute for Prospective Technological Studies (Office for Official Publications of the European Communities 2006).

217. Jaco Huisman and others, 'Where did WEEE go wrong in Europe? Practical and academic lessons for the US' in Proceedings of the 2006 IEEE International Symposium on Electronics and the Environment (The Institute of Electrical and Electronics Engineers 2006) 83-88, 84.

4.5 WEEE Recast Directive 2012/19/EU

4.5.1 Context

Despite the significant changes in patterns of collection and disposal brought by the WEEE Directive a few years after its implementation – only an estimated 13% of WEEE going to landfill or incineration – there was a growing concern over the effectiveness and efficiency of the Directive. The EU collection target at the time was of 4 kg of WEEE per capita, representing about 2 million tonnes per year, out of around 10 million tonnes of WEEE generated annually in the EU. By 2020, the estimated volume of WEEE should increase to 12 million tonnes. When such figures were compared to the impacts of the Directive, the conclusion was that, although it represented an important mark on e-waste management, the Directive still had brought insufficient results, and those derived from problems in achieving its main objectives with efficiency. In order to approach those issues, in 2008, based on the experience gathered from stakeholders and Member States during a 3-year review the European Commission released a staff working paper for a recast of the WEEE Directive.²¹⁸

Main findings from the European Commission Statistics²¹⁹ revealed household appliances as the dominant product category of WEEE in all Member States. The second product most discarded in 20 out of 28 Member States was identified as IT and telecommunication equipment, and consumer equipment and small household appliances ranked in third or fourth place in terms of quantity of total EEE put on the market, in the MS. Those figures proved essential for identifying the need for more elaborated strategies, and targets for household consumers.

The staff working paper for a recast of the WEEE Directive was a result of the extensive analysis carried out as part of the review process scheduled for 2008. The technical, legal and administrative problems caused by the implementation process of the Directive were resulting in costly efforts from market actors and administrations, low levels of innovation in waste collection and treatment, unnecessary administrative burden, and, therefore, continuing environmental harm. The main issues identified were:

218. European Commission, 'Staff working paper accompanying the Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast) Summary of the Impact Assessment' COM(2008) 810 final.

219. Eurostat, 'EEE put on the market 2010 by categories country' (2010) <http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:F2_EEE_put_on_the_market_2010_by_categories_country.png&oldid=177987> accessed 13 April 2014.

- Lack of clarity on the products covered by the WEEE Directive and their categorisation, with different interpretations of the current provisions made by different Member States and stakeholders
- Diverging producer registration requirements in Member States resulting in economic actors having to comply with 27 different producer registration schemes causing unnecessary administrative burdens
- Although approximately 65% of electrical and electronic equipment (EEE) placed on the market were separately collected, less than half of them were treated and reported according to the requirements of the Directive
- Leaks to substandard treatment sites in the EU and illegal exports to third countries, including non-OECD as a growing problem
- Lack of detailed enforcement requirements resulting in absence of enforcement of the WEEE Directive in Member States
- Inexistence of targets for the re-use of whole appliances
- Losses of valuable secondary raw materials and increasing risk of release of hazardous substances into the environment
- The collection rate of 4kg/inhabitant per year of WEEE from private households, ('one size fits all') did not reflect the economies of individual Member States and thus lead to sub-optimal targets for some countries, whilst leading to over-ambitious targets for others

Seeking to improve the quality and effectiveness of the WEEE Directive, the proposal from the Commission of the European Communities for a review sought to tackle the inefficiencies by means of the following measures:

- To reduce administrative costs through the removal of all unnecessary administrative burdens, although maintaining the level of environmental protection
- To reduce impacts on the environment from the collection, treatment, and recovery of WEEE at the levels where the greatest net benefit to society results
- To improve effectiveness, and implementation of the Directive through increased compliance, and reduced 'free-riding'
- To introduce a collection target of 45% of electronic equipment sold, that would apply from 2016 and, as a second step starting in 2019, a target of 65% of equipment sold, or 85% of electronic waste generated
- To broaden, and clarify the definition of 'producer'
- To extend, from 2018, from the restricted scope to an all-categories of electronic waste, to be beforehand analysed by an impact assessment

In January 2009, the Council consulted the European Economic and Social Committee, according to Article 175(1) of the treaty establishing the European Community. Further in June of the same year, the Committee adopted its opinion, presenting remarks, and recommendations which will be mentioned

later in this study. Until that date, the aim of the WEEE Directive of achieving a functional internal market approach to waste management had not been reached. Additionally, as mentioned before, the existence of considerable differences resulting from interpretations of the Directive during the implementation processes by the Member States had not been foreseen. No less important, the ambiguities reported in the definitions in the Directive and the freedom in implementation given to the Member States (Article 175 EC Treaty) were also reported as causing problems to the implementation process.²²⁰

The opinion of the European Economic and Social Committee on the proposal for a review of the Directive expressed to see it as an opportunity to provide an increase of environmental and economic positive impacts, and highlighted similar concerns to the ones presented by the Commission. Also on the Committee's opinion, one of the main issues to be addressed to was to provide for a reduction of the administrative burden on the market operators. Another highlight was the need for better interaction between provisions for the protection of the environment, and rules that affect the good functioning of the internal market. Still in the opinion of the Committee, there was reference to the shipment of electrical and electronic waste to third countries, due to the lower environmental standards and the recommendation to focus on tackling the electrical and electronic waste stream in the EU in a cost-effective manner seeking to avoid such practice.

The scope of the WEEE directive was also discussed. On one side some ministers claimed for its scope to be defined through a minimum list of covered equipment, as in the existing legislation. On the other side, some ministers supported the option for an open scope, which would include all electrical and electronic equipment. The intention of this measure was to provide for an improvement of the environmental protection. Further in the procedure, the Council determined its first-reading position on the revised EU rules concerning waste electric and electronic equipment.²²¹ The recast should be designed in order to improve collection and recycling of used electronic devices, as well as to reduce illegal exports of such waste from the EU. Therefore, by approaching the collection rates in order to increase their effectiveness, the recast should adapt the targets according to the size and economic situation of each EU country. The proposal was to increase the annual collection target for each Member based on the average WEEE produced in the national market. The measure would take effect four years after the entry into force of the revised law. Once this phase had been accomplished, there would

220. European Economic and Social Committee, 'Opinion on the Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE)' Rapporteur Sylvia Gauci 24.06.2009, 1-2.

221. Council, 'Press Release 3075th Council meeting Environment' 7689/11 (Press 61) 14.03.2011.

be another period of four years for transition (which was reduced to three at the final version), when Member States would be expected to achieve a 65% collection rate. Some flexibility on achieving those targets would be considered, in the case of EU Member States where consumers use fewer electronic devices.

The Council also expressed as one of the aims for the recast of the Directive the opportunity to review goals that seek to encourage the re-use of entire appliances. For this reason the Council position brought as a suggestion the increase by 5% of previously established objectives for recovery and recycling, counting for them the re-use of whole appliances. Another measure proposed by the Council configured to widen the scope of the law, as a form to encompass all electric and electronic equipment six years after the entry into force of the recast.

As a result of the opinions and discussions from the Committees, Commission and Council, improved rules on the collection and treatment of e-waste entered into force by means of the Directive 2012/19/EU²²² on August 13, 2012. The Directive 2012/19/EU, a recast of the WEEE Directive, sought to stimulate greater improvement of the resource efficiency in Europe. According to the opinion of the Commission in 2012:

Specific objectives of the WEEE recast proposal (2008) were to increase resource efficiency and ensure proper treatment of e-waste by setting new collection targets adapted to the reality of each Member State. Further objectives were to reduce unnecessary administrative burdens, and to ensure better implementation, especially by reversing the burden of proof on exports of used equipment suspected to be WEEE.²²³

Important to stress that the WEEE recast Directive acted not only as an environmental protection law in the EU, but also as an instrument for the improvement of resource efficiency. This reflects into the current figures of one third of electrical and electronic waste in the EU being separately collected within the documented system. With the final version of the recast Directive, the scope, and targets were planned to be progressively widened, and Member States were expected to amend, and align their pre-existing legislation on WEEE by 14 February 2014. Concerning the changes adapted to the EEE categories, to EEE falling within categories set out in Annex the Directive should apply from 13 August 2012 to 14 August 2018, as a transitional period. From 15 August 2018 onwards, all EEE should be classified within the

222. Directive 2012/19/EU on waste electrical and electronic equipment (WEEE recast) OJ L 197/38.

223. European Commission, 'Opinion pursuant to Article 294(7)(c) of the Treaty on the Functioning of the European Union, on the European Parliament's amendment[s] to the Council's position regarding the proposal for a Directive on waste electrical and electronic equipment (WEEE)' COM/2012/0139 final, 3.

categories set out in Annex III and IV, following the change to an open scope.

Focusing on the ‘producer responsibility principle’, collection targets to be annually achieved were defined to start in 2016, when the Member States will be held responsible for ensuring collection of at least 45% of the average weight of EEE placed on their respective national market. After 2019, the target for the collection rate was defined to be of 65%, or, alternatively, of 85% of all WEEE generated on the national territory of the Member State. Those targets were defined with the aim to ensure an approximately amount of 20kg per capita, or around 10 million tonnes, to be separately collected in the EU by 2020.

Another long-time expected improvement was the reduction of administrative burdens through harmonisation of national registration, and reporting requirements. The requirements of Member States for registration of e-waste producers were supposed to be aligned more closely, in a response to more specific provisions. Also illegal shipments of WEEE representing a critical problem in the EU received more attention in the recast. Finally, the new Directive approached the matter by obliging exporters to test whether EEE is properly working or not, and to provide documents on the nature of shipments that could be identified as illegal.

4.5.2 New and Enhanced Definitions and related issues

As previously mentioned, part of WEEE Directive’s recast process involved the expansion, revision, and inclusion of definitions to the existing legislation once lack of clarity in the definitions for the actors, and the EEE involved resulted in various difficulties during the implementation process of the first directive.

Additionally, having in mind that this research seeks to observe and learn from the European model and further consider possibilities for the application of some of those instruments, policies, and definitions to the Brazilian framework, this topic aims to be of greater utility especially for the ones not familiar with the European legislation. Therefore, one of the purposes of this section is to clarify the improved and strengthened definitions of the first WEEE Directive brought by its recast. The following items are also relevant information to fully understand the instruments adopted by the Directive, as it refers to different concepts and defines responsibilities for the actors involved, procedures, strategies, and targets involved in the specific context where the e-waste is inserted.

i. Electrical and Electronic Equipment or EEE

Electrical and Electronic Equipment ‘means equipment which is dependent on electric currents or electromagnetic fields in order to work properly and

equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1000 volts for alternating current and 1500 volts for direct current'. As clarified by the DG-Environment, 'dependent on electric currents or electromagnetic fields' means that electricity is the primary energy to fulfil the basic function of the product. The understanding for EEE remained unchanged if compared with the 2002/96/EC Directive, with the difference of no longer making reference to a list of categories. The recast Directive brought a temporary list of ten categories, valid only for the transitional period (Annex I), as provided for in Article 2(1)(a) and a list of six categories under which all equipment that falls under the definition of EEE should be placed, once the Directive changes to have an 'open scope' (Annex III).

ii. *Waste Electrical and Electronic Equipment or WEEE*

The content remained similar to the 2002/96/EC Directive. Although the reference to the concept of waste now is based on Article 3(1) of Directive 2008/98/EC,²²⁴ since Directive 2006/12/EC of the European Parliament, and of the Council, of 5 April 2006 on waste (the codified version of Directive 75/442/EEC as amended) was repealed by it. The concept of waste, therefore, was not altered, although there is no longer an 'annex list of categories' to which it refers to.

iii. *Producer*

The changes brought by the recast introduced a more detailed definition for producer, and clarified the meaning of producer at a national level. This was the result of intensive debates, as there were divergent opinions between the Commission and the Council. The role and definition of producer proposed by the Commission were of a 'European producer approach' and would entail important difficulties for Member States in the implementation of the Directive, notably with respect to the financial responsibility of the producer for the management of WEEE, and the achievement of the collection and recovery targets.

The main argument against the application of the European definition of producer defended that, if this definition would be adopted, the MS would have no proper mechanism to identify responsible actors to fulfil, in their national legislation, the provisions on producer responsibility. And the impossibility for identifying responsible actors in national jurisdictions would contribute to the increase of free riders, and lack of financial resources for treating orphan WEEE in the future. Furthermore, the choice for a European

224. Article 3(1) 'waste' means any substance or object which the holder discards or intends or is required to discard' OJ L 312, 22.11.2008, 3 (Waste Framework Directive).

definition of producer would imply a the need for a registration system where the producer would need to register only once, which would be at the national register where his products were first placed on the European market. Nonetheless, such scenario would greatly depend on a successful communication system among MS registers in order to identify flows of EEE over national borders, implying that complex procedures would have to be developed. A natural consequence for the need for producers to register only once would be an unbalanced number of producer registrations in the MS, as those with ports are more likely to have more registrations. The phenomenon would cause great difficulties for the financing and running of compliance systems.²²⁵

After the final debates took place in the Council,²²⁶ the Presidency decided, at the request of all delegations, to re-introduce the meaning of the definition of producer at national level. The final version of Article 3(1)(f) was defined as:

Any natural or legal person who, irrespective of the selling technique used, including distance communication within the meaning of Directive 97/7/EC^[227] of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts:

(i) is established in a Member State and manufactures EEE under his own name or trademark, or has EEE designed or manufactured and markets it under his own name or trademark within the territory of that Member State; (ii) is established in a Member State and resells within the territory of that Member State, under his own name or trademark, equipment produced by other suppliers, a reseller not being regarded as the ‘producer’ if the brand of the producer appears on the equipment, as provided for in point (i).

(iii) is established in a Member State and places on the market of that Member State, on a professional basis, EEE from a third country or from another Member State; or

(iv) sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or in a third country’ (Article 3(1)(f) 2012/19/EU).

225. C Van Rossem, ‘Individual Producer Responsibility in the WEEE Directive - From Theory to Practice?’ (Doctoral dissertation Lund University 2008) 268-269.

226. Debate in Council ‘2008/0241(COD)’ 11.06.2010. Summary available at <[www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2008/0241\(COD\)](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2008/0241(COD))> accessed 20 December 2014.

227. Directive 97/7/EC on the protection of consumers in respect of distance contracts [1997] OJ L 144/19.

iv. *Distributor*

Along with the concept and the responsibilities defined for ‘producers’, the ones defined for ‘distributors’ are some of the most discussed. Article 3(1)(g) defined distributor as ‘any natural or legal person in the supply chain, who makes an EEE available on the market. This definition does not prevent a distributor from being, at the same time, a producer. Concerning the responsibilities for the separate collection of WEEE by distributors, Article 5(2)(b) made them responsible for accepting discarded EEE once a newer equivalent was purchased. And authorised Member States to deviate from the provision as long as the returning of WEEE by the final holder was ensured to be as convenient as originally suggested by Article 5(2)(b), and still free of charge for the final holder. Article 5(2)(c) defined the obligation for distributors at retail shops with sales areas relating to EEE of at least 400m² to accept ‘very small’ WEEE, with no obligation to the end-user to buy an equivalent type of EEE. Likewise, Member States were authorised to derogate from the provision in case application of alternative existing collection schemes were proven to be at a minimum, equally as effective.

Once again the influence of the ‘Producer Responsibility Principle’ can be observed when most of the Member States obliged producers to finance the costs associated with collecting, and storing of WEEE by distributors (although exemptions were made for small distributors). This action was recognised as creating incentives to an increase in the collection rates.

v. *WEEE from private households*

The concept remained similar, with the addition of further detailing: ‘Waste from EEE likely to be used by both private households and users other than private households shall in any event be considered to be WEEE from private households’ (Article 3(1)(h) 2012/19/EU). A clear distinction between non-household WEEE, and WEEE from private households was noticed as essential for establishing a proper management system for the treatment of WEEE.

vi. *Finance agreement*

The definition was kept as in Article 3(m) 2002/96/EC of the first Directive, which defined a finance agreement as ‘any loan, lease, hiring or deferred sale agreement or arrangement relating to any equipment whether or not the terms of that agreement or arrangement or any collateral agreement or arrangement provide that a transfer of ownership of that equipment will or may take place’, now Article 3(1)(i) 2012/19/EU.

vii. *Distinction between Making available on the market and Placing on the market*

Article 3(1)(j) of the recast Directive stated that ‘making available on the market’ means any supply of a product for distribution, consumption or use on the market of a Member State in the course of a commercial activity, whether in return for payment or free of charge’. While according to Article 3(1)(k) ‘placing on the market’ means the first making available of a product on the market within the territory of a Member State on a professional basis’.

viii. *Removal*

In Article 3(1)(l) 2012/19/EU removal ‘means manual, mechanical, chemical or metallurgic handling with the result that hazardous substances, mixtures and components are contained in an identifiable stream or are an identifiable part of a stream within the treatment process. A substance, mixture or component is identifiable if it can be monitored to verify environmentally safe treatment’.

ix. *Equipment excluded from the scope of the recast Directive*

The following EEE was mentioned in Article 2.4 of the recast Directive as exceptions from its scope and also had clear definitions specified in Article 3 of the same Directive.

The Directive defined ‘Large Scale Stationary Industrial Tools’ as ‘a large size assembly of machines, equipment, and/or components, functioning together for a specific application, permanently installed and de-installed by professionals at a given place, and used and maintained by professionals in an industrial manufacturing facility or research and development facility’ (Article 3(1)(b) 2012/19/EU). By this definition, the intention is to clarify that those equipment are not intended for placement on the market as a single unit (commercial or functional). ‘Large Scale Fixed Installation’ also received a specific definition, which is described as ‘a large-size combination of several types of apparatus and, where applicable, other devices, which: (i) are assembled, installed and de-installed by professionals; (ii) are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location; and (iii) can only be replaced by the same specifically designed equipment’ (Article 3(1)(c) 2012/19/EU). ‘Non-Road Mobile Machinery’ also is listed in the definitions as ‘machinery, with on-board power source, the operation of which requires either mobility or continuous or semi-continuous movement between a succession of fixed working locations while working’ (Article 3(1)(d) 2012/19/EU).

Concerning medical devices, there were three listed in Article 2.4 as being excluded from the scope of the Directive: medical devices, and in vitro

diagnostic medical devices – where such devices were expected to be infective prior to end of life – and active implantable medical devices. ‘Medical Device’ means a medical device or accessory within the meaning of, respectively, point (a) or (b) of Article 1(2) of Council Directive 93/42/EEC of 14 June 1993 concerning medical devices²²⁸ which is EEE’ (Article 3(1)(m) 2012/19/EU). While ‘In Vitro Diagnostic Medical Device’ means an in vitro diagnostic device or accessory within the meaning of, respectively, point (b) or (c) of Article 1(2) of Directive 98/79/EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices²²⁹ which is EEE’ (Article 3(1)(n) 2012/19/EU). And, finally, ‘Active Implantable’ means an active implantable medical device within the meaning of point (c) of Article 1 (2) of Council Directive 90/385/EEC of 20 June 1990 on the approximation of the laws of the Member States relating to active implantable medical devices²³⁰ which is EEE’ (Article 3(1)(o) 2012/19/EU).

x. Definitions from 2008/98/EC Directive

Definitions laid down in Article 3 of Directive 2008/98/EC were adopted by Directive 2012/19/EU for reinforcing the understanding over the concepts bellow. During the discussions, position papers²³¹ - mostly from associations of local authorities and organisations of social enterprises with activities in reuse and repair - expressed special interest in the inclusion of provisions emphasising the waste hierarchy presented in the waste framework directive and, consequently, the opportunities for reuse of discarded EEE.

- a. Hazardous waste** ‘means waste which displays one or more of the hazardous properties listed in Annex III’ (Article 3(2) 2008/98/EC)
- b. Collection** ‘means the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility’ (Article 3(10) 2008/98/EC)
- c. Separate collection** ‘means the collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment’ (Article 3(11) 2008/98/EC)
- d. Prevention** ‘means measures taken before a substance, material or product has become waste, that reduce: (a) the quantity of waste, including through the re-use of products or the extension of the life span of products; (b) the adverse impacts of the generated waste on the environment and human health; or (c) the content of harmful substances in materials and products’ (Article 3(12) 2008/98/EC)

228. OJ L 169, 12.7.1993, 1.

229. OJ L 331, 7.12.1998, 1.

230. OJ L 189, 20.7.1990, 17.

231. For instance, see: Position Paper from VGN (Association of Dutch Municipalities) (2009) and Position Paper from RREUSE (2010).

- e. **Re-use** ‘means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived’ (Article 3(13) 2008/98/EC)
- f. **Treatment** ‘means recovery or disposal operations, including preparation prior to recovery or disposal’ (Article 3(14) 2008/98/EC)
- g. **Recovery** ‘means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations’ (Article 3(15) 2008/98/EC)
- h. **Preparing for re-use** ‘means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing’ (Article 3(16) 2008/98/EC)
- i. **Recycling** ‘means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations’ (Article 3(17) 2008/98/EC)
- j. **Disposal** ‘means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations’ (Article 3(19) 2008/98/EC).

4.5.3 The Recast of the Provisions

As understood from the analyses of the reports prepared by the MS over the implementation and transposition process of the WEEE Directive in each national legal system, although the majority of countries struggled to implement the Directive, no major formal problems related to the transposition of the Directive itself were pointed out. The rates of gathering, recycling or recovery of WEEE were reported to be increasing, as a positive effect of the Directive with the remark that yet the results had not reached a sufficient level. The figures were especially high in Member States that did not have a WEEE collection or treatment system before the coming-into-effect of the first WEEE Directive in 2003.

i. The Scope and the Categories covered by the recast Directive

In the draft report on the proposal for the recast Directive, the scope was another of the approached topics. Relating to the choice for either an open scope or a specified list for the WEEE Directive, the Committee on the Envi-

ronment, Public Health and Food Safety declared: ‘An “open” scope results in greater legal certainty - a major aim in revising the Directive - since all EEE is included. A binding, category-based product list would have to be continually revised in order to reflect technical progress on the electrical and electronics market.’²³²

During the drafting process, the European Parliament²³³ expressed that the reduction of the number of equipment categories from the current 10 to just five constituted a further simplification. A change which reflected the current practice and which should prevent unnecessary administrative outlay. According to the Parliament, the categorisation reflected an environmental approach, as the grouped appliances presented similarities in terms of composition, and their environmental impact was taken into account. In that sense, the categories were seen as no longer relevant with regard to the Directive’s scope of application, but only in relation to the recovery, recycling and preparation-for-reuse rates. Further in the discussions of the recast Directive, the justification from the European Parliament in the II recommendation for second reading²³⁴ defended the open scope as resulting in greater legal certainty – a major aim in revising the Directive – once all EEE would be included, as a matter of principle. So far the grouping into individual categories had led to widely differing interpretations in the Member States, a situation that should be avoided. Similarly, new products could also thereby be taken into account, avoiding further revision of the directive to include those in the scope.

As a result, Article 2 of the recast Directive brought the provision for an open scope of products within six EEE categories. After the transitional period from 13 August 2012 to 14 August 2018, the new categories listed in its Annex III should then be applied. The six open scope categories defined were: 1. Temperature exchange equipment; 2. Screens, monitors, and equipment containing screens having a surface greater than 100 cm²; 3. Lamps; 4. Large equipment; 5. Small equipment; 6. Small IT and telecommunication equipment.²³⁵ Further details about targets for recovery and re-use or recycling as well as specific dimensions of those are informed later in this chapter.

232. European Parliament, ‘1st reading agreement’ COD 2008/0241 Committee on the Environment, Public Health and Food Safety, rapporteur Jill Evans.

233. European Commission, ‘Report on the proposal for a directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast)’ COM(2008)0819– C6-0472/2008 – 2008/0241(COD) A7-0229/2010 explanatory statement, 60.

234. European Parliament, ‘II Recommendation for second reading’ A7-0334/2011.

235. OJ 2012 L197/38 (WEEE recast) Annex III.

ii. *Administrative Burdens Relieved*

Article 17 introduced the concept of an ‘authorised representative’ as an attempt to avoid the need for a legal seat of companies in each Member State and combined with Article 16 aimed at a better harmonisation and cooperation among the national registers. According to the Article, Member States should ensure a producer established in another Member State – under one of the definitions in Article 3(1)(f)(i) to (iii) – that it is allowed to appoint a legal or natural person established on this MS territory as the authorised representative responsible for fulfilling the obligations pursuant to the WEEE Directive of that producer, on that territory. Even further, in the case of a producer as defined in Article 3(1)(f)(iv) established on its territory, and selling EEE to another Member State in which it is not established, each Member State should ensure that an authorised representative is appointed in that Member State, as a person responsible for fulfilling the obligations of that producer, relating to the WEEE Directive, on the territory of that Member State.

Seeking to reduce administrative burdens and achieve further alignments among WEEE producer registers across the EU, Article 16 of the recast Directive requested MS to ensure that producers or authorised representatives could register and report information on websites, and that MS registration website would provide web links to the national registers in other Member States. On the words of Article 16(2)(a) ‘each producer or each authorised representative where appointed under Article 17, is registered as required and has the possibility of entering online in their national register all relevant information reflecting that producer’s activities in that Member State’ and Article 16(2)(d) ‘national registers provide links to other national registers on their website to facilitate, in all Member States, registration of producers or, where appointed under Article 17, authorised representatives’. There were official communications from producers and compliance schemes informing their satisfaction with the new rules for harmonising of the registration and reporting obligations across Member States.

iii. *Different Collection Rates and New Targets*

The WEEE recast Directive was implemented having in consideration a different collection rate and deadline for Bulgaria, the Czech Republic, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia and Slovakia (Article 7(3)). Those differences in collection performance were identified to be influenced by the awareness of final users and their disposal behaviour, and the availability of collection infrastructure and acceptance criteria.²³⁶

236. Deepali S Khatriwal and others (n 162) 954-962, 959.

For medical devices, in the first Directive there was only the reference to this category of WEEE, nonetheless, no targets were specified at the time. The targets for medical devices (category 8) were only defined on the proposal²³⁷ for the recast Directive. The Commission suggested that those were set at the same level as the ones for monitoring and control instruments (category 9), which was accepted by the final version of the recast Directive.

Another item included in the discussions over the new targets to be defined by the recast was the reuse of WEEE. Divergent opinions arose concerning the relevance for specific targets to be defined for this topic. The amendments made by the European Parliament to the Commission's proposal suggested that the targets for recycling and reuse would not be calculated together. Therefore, while on one hand the Commission proposal²³⁸ suggested the inclusion of the reuse of whole WEEE in the increased targets for recycling – in an attempt to promote the reuse – on the other hand, the European amendments²³⁹ 39, 40 and 41 in Article 11 paragraph 1 points a, b, and c on the Commission's proposal for a Directive, suggested that out of the new targets proposed by the Commission, for reuse and recycling, 5% should be specially defined for reuse and, what remains of it, for recycling (categories 1, 2, 4 and 5 from Annex-IA).

In the table below, an overview of the minimum recovery and recycling targets per category of WEEE, referred to in Article 11 and set out in Annex V, has been set for the period from 13 August 2012 until August 2015, and the period from 15 August 2015 until 14 August 2018.

237. European Commission, 'Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (Recast)' COM(2008) 810 final.

238. *ibidem*. On the same opinion see EERA, argued that the 5% for reuse was not achievable for WEEE from households.

239. European Parliament, 'Report ***I on the proposal for a directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast)' (Committee on the Environment, Public Health and Food Safety 8 September 2010) rapporteur Karl-Heinz Florenz, A7-0229/2010.

Table 4.2 Minimum Targets per Category of WEEE Overview

Category Description		13/08/2012		15/08/2015	
		14/08/2015		15/08/2018	
		Recovery	Recycling	Recovery	Re-use Recycling
1	Large household appliances	80%	75%	85%	80%
2	Small household appliances	70%	50%	75%	55%
3	IT and telecommunications equipment	75%	65%	80%	70%
4	Consumer equipment and Photovoltaic panels	75%	65%	80%	70%
5	Lighting equipment	70%	50%	75%	55%
6	Electrical and electronic tools (except large-scale stationary industrial ones)	70%	50%	75%	55%
7	Toys, leisure and sports equipment	70%	50%	75%	55%
8	Medical devices (except all implanted and infected products)	70%	50%	75%	55%
9	Monitoring and control instruments	70%	50%	75%	55%
10	Automatic dispensers	80%	75%	85%	80%
	Gas discharge lamps	-	80%	-	80%*

*Target specified only for recycling.

In the next table, the overview for minimum recovery and recycling targets per category of WEEE, referred to in Article 11 and set out in Annex V referring to categories listed in Annex III, and set for the period from 15 August 2018.

Table 4.3 Minimum Targets per Category of WEEE Overview (after 15/08/18)

Category Description		Recovery	Re-use and Recycling
1	Temperature exchange equipment	85%	80%
2	Screens, monitors, and equipment containing screens having a surface greater than 100 cm ²	80%	70%
3	Lamps	-	80%*
4	Large equipment (any external dimension more than 50 cm)	85%	80%
5	Small equipment (no external dimension more than 50 cm)	75%	55%
6	Small IT and telecommunication equipment (no external dimension more than 50 cm)	75%	55%

**Target specified only for recycling.*

iv. *Product Design*

Even though the provisions from the first WEEE Directive had been reported as successfully implemented in national legal frameworks, the strategy of motivating product design for facilitating further reuse, recycling, and recovery by connecting it to individual producer responsibility has been questioned. The greatest difficulty is related to the fact that collection of WEEE from households in most of the MS is collective, and the costs for its treatment are shared among the producers. As a consequence of this structure, producers who invest in Ecodesign for their products will most likely not benefit from the costs reduction that such investments would create for treatment of WEEE of said products.

This issue was discussed during the drafting of the recast, leading to opposing opinions. A majority defended that the WEEE Directive should no longer approach Ecodesign, as the topic was considered to be already covered by the Ecodesign Directive, issued in 2009. On the other hand, the European Environmental Bureau (EEB), among others, defended the need for an overlap between the Directives, as a form of intensifying the discussion, since the Ecodesign Directive had not originated any implementation measure integrating end-of-life requirements.

Additionally, a discussion over the categories for the open scope phase raised some concerns for incentives for Ecodesign in ICT. The initial proposal from the Commission for an approach based on five categories was observed to severely hamper the development of Ecodesign in ICT. For this reason, an amendment was proposed for a sixth category, which would place ICT appliances in a category of their own and, ensure that Ecodesign achievements for those EEE would not be robbed of their value through in-

discriminate categorisation of, for instance, these products along with kettles and toys.²⁴⁰

A solution found to be suitable for the European scenario seeking to lead producers to invest in product design was the creation of environmental parameters of product design to be followed by all. The recast of the Directive expanded ‘product design’ from a standalone concept of ‘design for recycling’, which encouraged individual measures from MS, to a wider context of functioning of the internal market, encouragement of cooperation between producers and recyclers, and relaying on national implementation of Ecodesign measures adopted under the Ecodesign Directive,²⁴¹ currently offering environmental parameters from a life cycle perspective, and maximum harmonisation.

v. *Visible fees*

Although the concept of ‘visible fees’ is agreed as the practice of showing the end-of-life costs of a product separately from the price of the appliance, at the time of purchase, the provision on ‘visible fees’ proposed by the Commission in 2008 raised some discussions. In the view of the Parliament and organisations as the European Environmental Bureau (EEB),²⁴² the proposal for a new Directive would lead Member States to consent the use of visible fees for an indefinite period, instead of only temporarily (until 2011 and 2013 for large household appliances), according to what had been initially prescribed by recital 20 and Article 8(3) on the WEEE Directive in 2003. Moreover, the arguments defended that the provision would be interpreted by many stakeholders as an opportunity to impose a flat and undifferentiated fee to all producers. If that happened, there would no economic incentive for producers to compete for improving the recyclability and durability of their products by reducing their real end-of-life costs through design. Mechanisms which discourage differentiation have been observed to undermine the implementation

240. European Parliament, ‘Draft report on the proposal for a directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) Amendments 172 – 273’ 2008/0241(COD) Committee on the Environment, Public Health and Food Safety, rapporteur Sabine Wils, amendment 266.

241. Directive 2009/125/EG establishing a framework for the setting of ecodesign requirements for energy-related products OJ L 285/10 (Energy-related-Products-Directive or ErP Directive). Also referred to as the Ecodesign Directive, it defines the minimal requirements for energy-related products. The objective of the directive is to reduce the energy consumption and the CO₂-emission rates, as well as increase the overall share of renewable energies.

242. European Environmental Bureau, ‘EEB Position on the recast of the WEEE Directive’ (June 2009) <www.eeb.org/publication/general.html> accessed 13 May 2014. This paper presented the views of the European Environmental Bureau (EEB), the largest European federation of environmental citizens’ organisations, on the revision of the Directive on Waste Electrical and Electronic Equipment (WEEE) published by the Commission in December 2008.

of Individual Producer Responsibility, as well as its potential to encourage Ecodesign.

In despite of the arguments supported by the European Parliament, and actors as the EEB, the paragraph 1 on Article 14 was maintained at the final version of the Directive: ‘Member States may require producers to show purchasers, at the time of sale of new products, the costs of collection, treatment and disposal in an environmentally sound way. The costs mentioned shall not exceed the best estimate of the actual costs incurred.’ However, even though Article 14(1) defines the need for real costs to be taken into account and correctly expressed on the visible fees, there has been a considerable difference between the legal text, and practice in the current 28 Member States.²⁴³

vi. *Registration, information and Reporting*

The provisions approaching this topic involve register of producers, collection of information on the quantities, and categories of EEE placed on the national market, and reporting to the Commission, according to Article 16. The final version of Article 16, and, to some extent, also of Articles 5 and 9, was a result of several adjustments to the proposal from the Commission,²⁴⁴ in 2008. The proposal was published containing a clear focus to reduce the administrative burden, an action which would also impact on registration and reporting obligations for producers. The issue of different specifications being asked from each national producer registers, was taken in consideration and a suggestion for it to be harmonised, including making the registers interoperable, was included in the text.

However, during the Council debates occurred in June and December 2010,²⁴⁵ the inter-operational registers proposed by the Commission were criticised by all delegations. A number of practical difficulties were raised by the MS, which also questioned the proposed definition of producers – no longer national, but European. The concerns related to the monitoring of producer's activities across the Member States, the monitoring of the quantities of EEE placed on different national markets, and of the transfer of money related to intra-community transfers of products or WEEE, which would all be drastically transformed, however, no feasible system could presented as a solution at that moment.

243. The union reached its current size of 28 member countries with the accession of Croatia on 1 July 2013. Official data retrieved from <<http://europa.eu/about-eu/countries/member-countries/>> accessed 20 December 2014.

244. European Commission 2008 (n 237).

245. Debate in Council ‘2008/0241(COD)’ 11/06/2010 and 20/12/2010. Summaries available at <[www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2008/0241\(COD\)](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2008/0241(COD))> accessed 20 December 2014.

In an attempt to tackle the information problem concerning the flows of WEEE and the real numbers concerning its collection, reuse, recycling and recovery, in September 2010, the Report²⁴⁶ from the Committee on the Environment, Public Health and Food Safety brought the Amendments 70, 71, 72 and 73. Those referred to Article 20 paragraph 3 a, b, c and d, respectively (new) to the text proposed by the Commission for a directive:

3a. Member States shall create a national register of acknowledged collection and treatment facilities. Only those facilities whose operators comply with the requirements set out in Article 8(3) shall be admitted to the national register provided for in this Article. The contents of the register shall be made public; 3b. Facility operators shall submit annual proof of their adherence to the requirements of the Directive, and shall submit reports in compliance with paragraphs 3c and 3d in order to maintain their status as acknowledged treatment facilities; 3c. Operators of collection facilities shall submit reports annually to enable national authorities to compare the volume of collected WEEE with the volume of WEEE actually transferred to recovery or recycling facilities. WEEE shall be transferred exclusively to acknowledged recovery and treatment facilities; 3d. Operators of treatment facilities shall submit reports annually to enable national authorities to compare the amount of WEEE taken back from owners or acknowledged collection facilities with the amount of WEEE actually recovered, recycled or, in accordance with Article 10, exported.

The justification stated that, by creating such a central register, an overview on the activities of all facilities carrying out collection, treatment, recovery, and recycling operations would become possible, and the possibility of monitoring recovery activities would be reinforced. In the text of the second recommendation for second reading,²⁴⁷ the Parliament reinforced its justification by stating that the purpose of the amendments was to ensure that Member States and operators would provide the necessary information in order to satisfy all concerned that the legislation is being implemented properly and effectively.

The amendments were rejected by both the Commission and the Council;²⁴⁸ therefore the creation of a national register of acknowledged collection,

246. European Commission, 'I Report on the proposal for a directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast)' COM(2008)0810 C6-0472/2008 – 2008/0241(COD), Committee on the Environment, Public Health and Food Safety, rapporteur Karl-Heinz Florenz.

247. European Commission, 'II Recommendation for Second Reading on the Council position at first reading with a view to the adoption of a directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (Recast)' C7-0250/2011 – 2008/0241(COD) Committee on the Environment, Public Health and Food Safety, rapporteur Karl-Heinz Florenz.

248. European Council, 'Position of the Council at first reading with a view to the adoption of a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (Recast)' 7906/2/11 REV 2 ADD 1. Statement of the Council's rea-

and treatment facilities was not included in the final version of the recast Directive. The justification from the Council informed the bringing of a new topic for the discussion, which was not the purpose of the recast procedure. Another argument introduced was the fact that the amendments did not add to the clarity or consistency of the text. More specifically, however, the amendments were partially covered by other provisions from the final version of the Directive, according to the Council: amendments 70 and 71, covered by Articles 5 (on collection) and 9 (on permits for treatment operations); Amendments 72 and 73 being addressed in Articles 7(2) and 11(4), 16(4), and Amendment 74 being addressed in Article 5, keeping in mind that the provision of the Waste Framework Directive (on permits, registration and record keeping among others) are applicable.

vii. *Enforcement of the WEEE Legislation*

A combined improvement in inspection and monitoring was identified as one of the major topics to be addressed by the recast in order to reflect in a more effective enforcement of the WEEE legislation. Aiming at such improvement and, therefore, to bridge the implementation gap across MS, the Commission²⁴⁹ proposed minimum inspection requirements to be set for Member States, as defined on Annex VI, referring to shipments of WEEE, on Annex VII, referring to selective treatment for materials and components of WEEE referred to in Article 8(2), and on Article 23, paragraph 4, when defining the possibility for the Commission to adopt implementing acts establishing additional rules on inspections, monitoring and in particular, uniform conditions to the shipments of WEEE outside Europe (exports), against illegal actions.

viii. *Minimum Quality Standards for Treatment*

A further development brought by the recast of the Directive, with base on the provision from Article 8(5) second paragraph, led to the European standardisation of the treatment of WEEE. According to the Article:

The Commission shall, no later than 14 February 2013, request the European standardisation organisations to develop European standard for the treatment, including recovery, recycling and preparing for re-use of WEEE. Those standards shall reflect the state of the art.

On 4 February 2013, the Commission requested the European Standardisation Organisations to develop European standards for the treatment of

sons adopted by the Council on 19 July 2011 and adoption by European Commission of its communication on Council's position at 1st reading on 11.08.2011.

249. European Commission 2008 (n 237).

WEEE. To which were elaborated the following European standards²⁵⁰ relevant for WEEE:

- EN 50419 on the marking of electrical and electronic equipment
- EN 50574 on the collection, logistics, and treatment requirements for end-of-life household appliances containing volatile fluorocarbons or volatile hydrocarbons
- EN 50625-1: Collection, logistics & treatment requirements for WEEE - Part 1: General treatment requirements.

ix. *Debates over the WEEE and RoHS Directives*

Since the publication of WEEE and RoHS Directives, the debate over the merging of the two Directives has been in place. When the discussions for the recast of the WEEE Directive took place, the topic naturally returned once again. Nevertheless, the position of keeping the Directives apart has been maintained. As expressed in the following statement from the EP: ‘The RoHS and WEEE Directives have different regulatory purposes and should therefore differ in their scope.’²⁵¹ During the procedure for the recast of the WEEE and RoHS²⁵² Directives, the Council held a policy debate for ministers to discuss their scope and a majority of delegations, at the time, supported the idea that the two directives could have separate scopes since each contained different legal bases and objectives.²⁵³ On the other hand, there was a divergent proposal supported by the Commission, which stressed the importance of maintaining the same scope for both directives and to harmonise them across the EU in order to improve their implementation and to raise legal certainty.

A discussion over the viability of amplifying the scope of the RoHS directive in order to include all electrical and electronic equipment also took place. Nevertheless, some delegations disagreed based on the argument that the costs of this option were unclear for the producers. As a final result, the

250. European Commission, ‘Standards on WEEE treatment’ (DG-Environment) <http://ec.europa.eu/environment/waste/weee/standards_en.htm> accessed 18 December 2014.

251. European Parliament, ‘Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (Recast)’ COD 2008/0241 Committee on the Environment, Public Health and Food Safety, 11.

252. The RoHS Directive (2002/95/EC) intended to eliminate as much as possible the use of hazardous substances in electrical and electronic equipment. In its scope it makes reference to EEE falling under the categories 1,2,3,4,5,6,7 and 10 set out in Annex IA of the WEEE directive. The use of lead, mercury, cadmium, hexavalent chromium and certain brominated flame retardants were prohibited, except for the cases when those substances were absolutely necessary, to which the directive also provided to be exempted from the ban.

253. Council, ‘Press Release 2968th Council meeting Environment’ 14361/09 (Press 290) 21.10.2009, 6-7.

RoHS Recast Directive was published in the Official Journal on 1 July 2011 as an independent Directive from WEEE Directive, with the aim of reducing administrative burdens and ensuring coherency with newer policies, and legislation.

The revised directive on hazardous substances in electrical and electronic equipment broadened the protection from dangerous chemicals to more electrical appliances and aimed at the improvement of the safety of products, as mobile phones, refrigerators and electronic toys. The ban was extended from the six initial hazardous substances in 2003 to more products and harmonised it across the EU as the ban was established to be applied to all electrical and electronic equipment (EEE) as well as to cables and spare parts. The so-called RoHS 2 no longer had references to the Annex and articles of the WEEE directive, although remained connected by means of seeking to reduce EEE's – and consequently WEEE's – harmfulness to human health and the environment. It should be highlighted that the obligation was established for the Commission to regularly review and adapt the list of restricted substances (according to a number of criteria). This means that more substances currently found in EEE could be banned in the coming years, and would naturally impact on WEEE.

4.5.4 Summary of the recast Directive

In sum, the focus points of the recast could be listed as follows.

- Scope. Open Scope from 15 August 2018 (Article 2), after the initial six years, the 10-category approach shall change to an open scope basis (unless excluded)
- Collection rates. The minimum collection rate from 2016 was adjusted from 4kg per capita to 45% calculated on the basis of the total weight of WEEE collected within a year in a specific MS, and, in seven years (by 2019), annually, 65% of the average of weight of EEE placed on the market (POM). In the three preceding years in a specific MS should be achieved or, as an alternative, 85% of WEEE generated on the territory of an specific MS, (Article 7)
- Targets. All recovery, and reuse and recycling targets, were defined to be increased by 5% (Article 11 Annex V)
- Producer responsibility. Extension of the producer responsibility for collection from households to collection facilities – where MS find appropriate (Article 12(2)), and the inclusion of the 'authorised representative'
- Ecodesign. From a 'standalone provision' to wider context and ErP Directive (Article 4)
- Fees. Visible fees were authorised permanently although must correspond to real costs

- Shipment of waste. Greater interface with Waste Shipment Regulations (EC 1013/2006 and EC 1418/2007), introduction of minimum requirements for monitoring shipment of WEEE/used EEE to address concerns of illegal exports and ‘dumping’ by means of Annex VI (Articles 10; 23).

One major criticism towards the European Parliament has been on the approval of the revised Directive for the disposal of electrical and electronic equipment without including any specific provisions to promote the reuse of old equipment, especially if considered that one of the goals since the first WEEE Directive – as well as the Waste Framework Directive hierarchy – has been of reuse even before recycling.

Concerning the connection of eco-design requirements into the take back of WEEE the criticism is due to the structure in the EU where 90% to 100% of any type of EEE that can be used within the household has only the option for a collective compliance scheme, which charges the recycling fees from the producers based on weight of equipment. Therefore, the producer has no real incentive for incorporating eco-design features into his products as he does not benefit from lower costs at the stage of recycling. A possible solution could be in the direction of differentiated compliance fees to producers, based on whether or not their products met certain Eco-design criteria.²⁵⁴

4.6 Analysis of the European legislation for the management of waste from electrical and electronic equipment

As the purpose of this research is to study the trajectory of e-waste legislation in EU and, by understanding unsuccessful measures and learning from the positive approaches, encounter possible legal provisions to be legally transplanted to the Brazilian legal framework, based on the topics analysed above, this section aims at producing an overview of the WEEE Directive and the results brought by its implementation in the Member States of the EU.

The legislation for WEEE, having its basis in the framework developed by the European Action Programmes and the origin of European environmental legislation, and further expanding to the Waste Framework Directive, finally grew into specific waste streams directives. This has proven to be a successful model as to the ability of readapting, re-evaluating its targets and maintaining updated information, all results from intense inspections and monitoring by periodical reports from the 28 Member States. An important European strategy was approach the environmental problems resulting from the management of waste not only relying at Environmental Action Pro-

254. R Veit, ‘Producer responsibility’s role in closing the material loop for EEE’ (Circular Economy - saving resources, creating jobs Green Week, Brussels, June 2014) <http://ec.europa.eu/environment/archives/greenweek2014/docs/presentations/parallel-side-sessions-2/2-4/raphael_veit_2.4.pdf> accessed 12 December 2014.

grammes, and the Waste Framework Directive, but expanding it to the creation of other Directives, specifically approaching different waste streams, as there is no single recipe to approach issues related to the management of different types of waste by one only strategy.

The awareness around the increase of electrical and electronic equipment in everyday life and of the frequency of innovations leading to obsolescence and disposal led to discussions, and drafting of a directive to provide for new rules enabling the reduction and treatment of so called e-waste. A process also adopted for providing a proper management of other waste streams. Some key strategies have led to positive results for treatment of e-waste nowadays in Europe. Access to increasingly accurate data is one of those. For targets to be established there must be reasonable knowledge concerning each of the stakeholders to be affected by them. Furthermore, for verifying the development and achievement of the targets, there must be updates regarding developments in order for those to be compared and considered satisfying or not. The request for information not only from producers, concerning products put in the market and taken-back, but also from all the stakeholders involved with the take-back of such products is essential in order to be provided with a real scenario.

The extended producer responsibility was responsible for connecting producers of EEE to their end-of-life products, at their role in the take-back system. The instruments of compliance allowed for producers to fulfil such responsibility individually or by joining a collective scheme, which became the core of the WEEE Directive, as it connects beginning and end-of-life products. The ‘financial guarantee’, made mandatory for each producer, completes the strategy; involving them. It particularly acts avoiding ‘free-riders’ and increased historical waste. An instrument particularly referred by the producers as considerably helpful was the ‘visible fee’ adopted since the first WEEE Directive, which indicated to consumers the costs of recycling historical waste and, consequently, prevented producers from having to finance those costs themselves. Although its presence in the recast Directive causes concerns over the possibility of misleading flat fees being created, it is still interpreted as a valuable economic instrument for incentivising the increase of collection, recycling and reuse of WEEE.

Concerning product design for reuse or recycling, the European model has taught that when collective schemes are available – most of households are served by these – producers are not motivated to invest in product design. Under those circumstances, the costs for collection and treatment are divided by all producers in the compliance scheme and any reduction on those costs due to product design will not be directed to the original producer, instead, it will be absorbed by the total amount of costs resulting from the process as a whole. Currently, the European Commission has ordered studies to find ways to combine systems and financing models in order to enable product design incentives in collective schemes systems to be successful.

From a more general perspective, the difficulties faced by the first WEEE Directive were particularly resulting from lack of clarity on definitions, and on standards to evaluate the achievement of targets. Considerable effort was taken by the MS which were in the position of setting up a collection system from its early stages and different national interpretations resulted in an unequal system. This diversity of implementation strategies among MS, based on differing interpretations of the requirements, had not been predicted by the provisions in the Directive. The differences among national legislations, concerning which stakeholders were defined as obliged to report the amounts of WEEE collected (producers and/or distributors among others involved with the take-back system), was indicated as one of the major difficulties. A clear example concerns registering and reporting, which, in some MS, was required only from producers and third parties acting on their behalf, while in others, all stakeholders involved with management of WEEE were expected to register and report, from recyclers to waste collectors, from local authorities to traders. There were also problems identified in the process of ensuring collected WEEE be treated and recycled or recovered within a system of certified operators. The issue relating to illegal trade to non-EU countries had grown considerably and the recast Directive brought provisions to regulate and prevent this practice by the MS.

The lack of sanctions to dissuade non-compliance of the provisions by producers or MS adds up to the critiques made to the WEEE Directive. It was observed that a gap as such would lead to consequent lack of inspections at the MS level in order to verify compliance with legal provisions.

The role of public authorities in national and, especially in local level, are essential to the success of the enforcement of WEEE legislation. However, lack of public awareness on existing collection systems and innovative techniques frequently results in inadequate decisions and leads to waste of material that otherwise could be recycled. An example is the case of sorting of e-waste; recycling targets have been set based on weight, following the usual preference for investing in the collecting and sorting of the largest volumes of waste fractions (also from collection schemes). Nonetheless, the smaller WEEE is more likely to offer high value on recovery, such as is the case with precious metals.

A complex matter as it is, to approach all stakeholders involved with management of WEEE, and to connect them in such a balanced form that enables their coexistence presupposes a careful observation of the Economy. For this reason, the few commercial opportunities brought by the implementation of the Directive represent another point of concern. The fluctuations in prices of secondary raw materials, which tend to decrease in value, constitute a key factor to be taken in consideration for new strategies. The costs of logistics are another important element within the equation.

Safe collection and treatment of WEEE, added to the control of electronic waste dumping or illegal shipping have notably increased in Europe, and

although different stages of development are present in the MS, collection systems and treatment of e-waste are actions performed in each one of them. In the context of the European Union, direct regulatory instruments defining strategies, limits and targets towards the waste problem – such as the directives and national legislation resulting from their transposition – clearly represent a major portion of all instruments available for developing environmental policy. However, one struggle becomes clear here, for at the same time those regulatory approaches have been mostly successful, there has always existed concern to avoid excessive inflexibilities or bureaucracies which could limit, and even compromise their effectiveness.

4.7 Remarks

WEEE should not only be considered as an irremediably growing flow resulting from our ever growing consumption. Rather, WEEE should be minimised and optimised as soon as the design stage of appliances, through increased durability and recycling possibilities. In this broader outlook, any WEEE generated and not properly collected is both a risk for human health and environment and potential resources spoilage.²⁵⁵

A comprehensive study of the development of European regulations for dealing with electrical and electronic waste has led to instructive lessons on instruments most likely to achieve a successful management of the fastest growing waste stream worldwide.

One of the main conclusions is the need for legislation to find a balance between the necessary flexibility for adapting to a fast changing market where changing products, materials and categories challenge the ability for legislation to take into account dynamic developments and the also essential ability to elaborate clear and sufficient parameters that can be adopted by each State avoiding gaps which would lead to discrepancies. By observing and studying the legal framework that has been developed by the European authorities, it is possible to identify a successful example for this goal. This structure brings concepts and provisions which can serve as guidance to a younger legal framework, such as the Brazilian National Policy on Solid Waste. The European legal framework for WEEE has benefited from different pieces of legislation nationally. Directives however were of particular benefit, proving to be far more instructive and detailed than the definition for ‘Directive’ suggests. During the process of transposition and implementation of those directives, recurrent reports fed the authorities with more accurate

255. European Environmental Bureau (EEB), ‘An assessment of Amendments to the WEEE Directive (Recast) – ENVI first reading vote on 3rd June 2010’ Briefing Paper (7 May 2010) <www.eeb.org/?LinkServID=8131D7F7-F15F-B86C-709AB01D0C5C625A&showMeta=0> accessed 10 December 2014.

data to provide for better evaluations and new enhanced policies so to identify problems and gaps, and, above all, to elaborate upon solutions and develop more accurate instruments.

The Environmental Action Programmes since the 70's, their development into the Waste Framework Directive introducing the principles on the collection, recycling, processing and disposal of waste, its ramifications into different Directives, each of them focusing at one of the waste streams, the WEEE directive, its recast, Regulations (REACH) and Directives (Ecodesign Directive and RoHS Directive), and further legislation constantly expanding,²⁵⁶ all those form a continuously expanding legal framework for approaching the waste problem in an environmentally sound manner. Considering the number of Member States and their contrasting scenarios of economic, cultural and geographical specificities, the European framework has been intensively analysed, tested and corrected in order to create balance among the EU, this stands to be the most extensive and successful structure to safely and soundly approach the management of e-waste in contemporary society.

Similar to the mosaic of Members States of the European Union is the diversity of States in Brazil. This country of continental dimensions is formed of federal States which present diverse economic, social and cultural realities. Knowledge gained from learning through practice, through difficulties and successes from the European Framework and National legislation, provide a useful example and inspiration to the Brazil legal framework on e-waste.

256. WEEE Directive, WEEE recast Directive, Ecodesign Directive (ErP), RoHS recast Directive, REACH regulation, EU Action Plan Sustainable Industrial Policy/Sustainable Consumption and Production, EU Resource Efficiency Roadmap and Raw Materials Initiative in context of EU 2020 Strategies/Industrial Policy, among others.

PART III

Case Studies: The United Kingdom, the Netherlands, France, and the Nordic countries

In the previous chapters, the European legislative framework for e-waste management has been presented, and a comparison has been made between the first WEEE Directive issued in 2002 and the recast Directive, from 2012. Over the next chapters, the aim is to focus on iconic cases of transposition of the Directives into national law and to study the successful measures as well as the shortcomings revealed in the process of adapting, and sometimes altering, the Directives.

The WEEE Directives were drafted based on Article 175 of the former EC Treaty (192 TFEU), which specifies that rather minimum requirements of the measures ought to be transposed into national law. The purpose of such a legal basis was to leave space for Member States to adopt more stringent measures when transposing a directive into national law. Nonetheless, the intention for this particular shaping of the WEEE Directives – for practical details to be easily fulfilled during the national transposition – turned each of the national implementations into a considerably different version from its base Directive. As history would show, the general instructions brought by the Directives created too much room for interpretations for MS, which, added to language problems on translations, national priorities, legislative history, lobbying, and geographical particularities, led to varied and conflicting transpositions in the EU, besides inconsistencies for the practice among the Member States.

The differences were many, and substantial. Bearing such variations in mind, for the purpose of this research, a better understanding of the European example includes an in depth review of the implementation of WEEE Directive in selected Member States. Three countries were chosen for a more detailed analysis chosen from MS which represent the different systems of national frameworks for compliance approaches, population density, size, as well as the positive results obtained from the implementation of the directive, especially concerning WEEE from households. A closer look will be taken at the roles and responsibilities of the stakeholders and aspects and struggles influencing successful provisions. Based on these criteria France, the Netherlands, and the United Kingdom were the case studies chosen for case studies of their legal framework in managing e-waste resulting from the transposition of the WEEE Directive and the Recast WEEE Directive.

The British Transposition and Implementation of the WEEE Directives

5.1 Introduction

Already a few years after the come into force of the WEEE Directive 2002/96/EC, and some months later to the start of EU's infraction proceedings²⁵⁷ against UK's delay on its implementation, the WEEE Directive was finally transposed into the UK law as 'The Waste Electrical and Electronic Equipment (WEEE) Regulations'.²⁵⁸ Also known as 'The WEEE Regulations'²⁵⁹, they were issued on 11 December 2006 and fully implemented by July 2007.

The UK was one of the last Member States to implement the WEEE Directive. As explained by the British Government, the WEEE Directive which was first agreed in 2003 proved to be a rather complex and costly text to be implemented. On 14 December 2005 the Government's Energy Minister, Malcolm Wicks, announced that implementation of the Directive in the UK would have to be delayed until 2007 as a consequence of the Government's commitment to implement it in a way that would enhance the environmental benefits while minimising the costs to business.²⁶⁰

Already at the beginning of the procedures for the transposition, the Discussion Paper of March 2003²⁶¹ from the Department for Trade and Industry

257. Infraction proceedings against the UK for failure to transpose the WEEE Directive into national law were started after the deadline of 13 August 2005 was not replied.

258. SI 2006 No 3289. The WEEE Regulations were amended by 'The WEEE (Amendment) Regulations 2007' (SI 2007 No 3454) and 'The WEEE (Amendment) Regulations 2009, No 1 & 2 (SIs 2009 No 2957 and No 3216) and 'The WEEE (Amendment) Regulations 2010', (SI No 1155). The UK's WEEE Regulations were supported by a full Regulatory Impact Assessment in 2006 (RIA, URN 06/2206) when they were made in Parliament.

259. Statutory Instruments 2006 No 3289. The Waste Electrical and Electronic Equipment Regulations 2006.

260. Association of London Government. Waste: ALG's response to the Government's consultation on the implementation of the Waste Electrical & Electronic Equipment Directive (WEEED) in the UK. Item No 15, 17 October 2006, 3.

261. British Department of Trade and Industry (DTI), 'Discussion Paper of March 2003 by the UK Government, Scottish Executive, Welsh Assembly Government, Northern Ireland Administration on the Implementation of Directives of the European Council and Parliament: 2002/96/EC (WEEE) and 2002/95/EC (RoHS)' URN 03/811 (2003) <www.parliament.uk/business/publications/business-papers/commons/deposited-papers/> accessed 18 December 2014. The report estimated collection at £141 to £211 per tonne,

estimated that implementing the WEEE Directive in the UK would cost £328 to £509 per tonne of collected WEEE for collection, treatment, reuse and recovery activities. As for the annual costs, these were estimated at £175 to £419 million. Since then, the Government was concerned about the impact the new regulations would have on businesses and local authorities.²⁶²

The WEEE Regulations have transposed into national law the main provisions of the WEEE Directive and introduced a waste management system for WEEE in the United Kingdom. The main goals of this system were declared at the explanatory memorandum as to:

- (a) minimise the disposal of WEEE as unsorted municipal waste by establishing a network of designated collection facilities in the United Kingdom; (b) ensure that all WEEE from private households that is collected at such designated collection facilities is sent for treatment, recovery or recycling to authorised treatment facilities or exporters that are approved under these Regulations; (c) achieve the recovery targets set out in the Directive; and (d) provide that producers of EEE are registered and that they are responsible for financing the costs of managing the waste that arises from EEE in each compliance period. Obligations are also imposed on distributors (i.e. retailers) in relation to the right of consumers to return certain WEEE from private households to distributors free of charge.²⁶³

Furthermore, the memorandum highlighted the non-transposition of the provisions requiring the permitting of WEEE treatment operations and defining standards for the treatment of WEEE²⁶⁴ (referring to physical treatment of separately collected WEEE in general). The choice for not transposing the provisions into the WEEE Regulations was clarified by the argument that those should be implemented by separate licensing regulations, which was accomplished by ‘The Waste Electrical and Electronic Equipment (Waste Management Licensing) (England and Wales) Regulations 2006’.²⁶⁵

Despite the strategy to avoid a hasty implementation of the WEEE Directive and, therefore, possibly escape the problems a rushed process could

treatment at £123 to £192 per tonne, and reuse and recovery at £64 to £106 per tonne. Annual information provision costs were estimated to be £18 million to inform consumers, £7 million to inform treatment facilities, and £12 million to support the UK and EU’s program registers.

262. British Department of Trade and Industry (DTI), ‘Review Announcement Letter Director of Sustainable Development: Sue Macdonald’, 14 December 2015. ‘The Government accepts that deferral of WEEE implementation has implications for Local Authorities. We announced previously that DTI would meet Local Authority New Burdens costs in the light of Ministerial decisions to defer the WEEE implementation.’

263. Waste Electrical and Electronic Equipment Regulations 2006 (No 3289) Explanatory Memorandum, 4.

264. Article 6 of the WEEE Directive 2002/96/EC.

265. Statutory Instruments 2006 No 3315. Environment Protection, England and Wales. The Waste Electrical and Electronic Equipment (Waste Management Licensing) (England and Wales) Regulations 2006.

provoke, there still were uncertainties provoked by unclear definitions and procedures absorbed from the Directive into the Regulations. In an attempt to tackle those difficulties, the DTI issued its 'Guidance Notes' combined with the support of the 'European Commission's Frequently Asked Questions'. Although the guidance notes were an attempt to bring clear instructions to the stakeholders involved in the WEEE cycle, those had no legal authority. Moreover, they were matter of frequent changes, as the DTI would update them according to comments received from the development of UK WEEE systems.

Not long after the full implementation of the WEEE Regulations in the UK, as specified in Article 17(5) of the WEEE Directive, the process of reporting the experiences from the transposition and implementation of the Directive by writing proposals for revision of the relevant provisions had started. The recast of the European WEEE Directive brought as a main goal the improvement of the effectiveness and efficiency of the original WEEE Directive, by reducing the negative externalities caused by the disposal of EEE once it became waste. The Directive 2012/19/EC on WEEE was published in the Official Journal on 24 July 2012, and it took only a few months to be transposed into law in the UK. The Waste Electric and Electronic Equipment (WEEE) Regulations 2013, also referred to as 'the Regulations', became law on the 1st of January 2014, and replaced the WEEE Regulations 2006, by bringing the main provisions of the recast WEEE Directive.

The WEEE system in the UK, since the come into force of the first WEEE Directive, has been constantly revising and enhancing its WEEE Regulations. As an example, in February 2015, the British Government approved a methodology to calculate the Compliance Fee offered as an option to a scheme that fails to meet its collection targets. The fee is expected to become an effective solution for the greatest challenge nowadays in the UK's WEEE system: the irregularities on the issuing of evidence and the complaints from producer compliance schemes (PCSs) that cannot access enough WEEE to accomplish their obligations about having to buy 'evidence' from the schemes with surplus at inflated prices. According to the WEEE Regulations, it is one of the Producer Compliance Schemes' responsibilities to obtain sufficient evidence notes to demonstrate they have discharged the collective household obligations of their members as notified by the appropriate agency.

Currently among the most successful WEEE recycling systems in the EU, the UK reaches promising figures of WEEE collection. The target that had been set by the Department for Business, Innovation & Skills to collect a total of 490,000 tonnes of WEEE in 2014 has recently been informed to have been met: 491,007 tonnes were collected across the year of 2014.²⁶⁶ The

266. British Department of Business, Innovation and Skills (BIS), 'Recycling up and costs down under new regime' (Press release Minister Matthew Hancock 25 February 2015)

collection rates have fulfilled Government's expectations, and, more importantly, reflect the success of the new WEEE legislation introduced in January 2014.

5.2 The WEEE Directive 2002/96/EC

5.2.1 The Process

The long process of studying the WEEE Directive 2002/96/EC for its implementing into UK law involved discussion papers, public consultations, and impact assessments not only to verify the most recommended possibilities for the British system to incorporate it, but also to identify the costs involved for producers, distributors and all stakeholders affected by the changes into sales of EEE and its safe and sound disposal, including the Government itself. This approach of issuing consultation documents proved to be well-received²⁶⁷ and effective on keeping especially the industry involved and informed at all stages of the process.

One of the most preoccupying measures brought by the Directive was, therefore, its scope and, more specifically, the challenge it represented to identify products in or out of it. The topic was object of a Discussion Paper, which responses in July 2003²⁶⁸ revealed the Government's decision to supplement the new legislation with non-statutory guidance. The 'Guidance Notes' were not part of the legislation, but were meant to support businesses and other stakeholders in the interpretation of the requirements of the Directive even though, as mentioned above, there were still downsides related to them.

The institutions involved with the process of implementation of the Directive were led by the Department of Trade and Industry (DTI), later replaced with the creation of the Department for Business, Enterprise and Regulatory Reform (BERR, 2007), and again, by the current Department of Business, Innovation and Skills (BIS, 2009). DTI conducted UK's negotiations on the drafting of the Directive at EU level as well as most of the aspects involved at its implementation in the UK. Defra (Department for Environment, Food & Rural Affairs) received the task to lead on certain aspects of

<<https://www.gov.uk/government/news/recycling-up-and-costs-down-under-new-regime>> accessed 20 September 2015. For up-to-date statistics see Environment Agency, 'Waste electrical and electronic equipment (WEEE) in the UK'

<<https://www.gov.uk/government/statistics/waste-electrical-and-electronic-equipment-in-the-uk-2013>> accessed 20 September 2015.

267. British Committee on Environment, Food and Rural Affairs, 'Minutes of Evidence. Joint memorandum submitted by the Department for Environment, Food and Rural Affairs (Defra) and the Department of Trade and Industry (DTI)' (E16) October 2003.

268. British Department of Business, Innovation and Skills, 'Responses to Discussion Paper: WEEE and ROHS Directives Report (Part I: WEEE Responses)' (July 2003) Question 3, 8.

domestic implementation, which included preparing guidelines on proper treatment of WEEE, waste permitting, and assessing producer's compliance with the collection, recycling, and recovery targets. Finally, DTI assigned the Environmental Agency (SEPA in Scotland and EHS in NI) in order to enforce the national regulations, and particularly, the topics guided by Defra.

The Explanatory Memorandum on European Community Legislation from the Department of Trade and Industry,²⁶⁹ already in March 2002, provided a first impression of the possible impacts on UK law of what was still a proposal for a WEEE Directive. It declared: 'There is no existing legislation that would cover the specific objectives of the proposal.' As for policy implications, the Memorandum informed that 'The Government supports the Common Position text and the objectives of the Directive, which are in line with our national waste strategies.'

After a few false starts for the transposition of the Directive, the final consultation paper containing the draft²⁷⁰ for the national Waste Electrical and Electronic Equipment Regulations was released by the Department of Trade and Industry in July 2006. The consultation was closed in October and the Regulations commenced on 1 January 2007, even though all provisions would come into force only in 1 July 2007.

The final schedule²⁷¹ proposed by the Government for the implementation of the WEEE Directive into UK Legislation contained the following phases:

- 17 October 2006: Closing date for response to the consultation of the DTI
- December 2006: Transposition of the Directive into UK law by the Government
- 31 March 2007: Deadline for WEEE producers to be registered with a PCS
- 1 April 2007: Introduction of Producer responsibility
- 1 April – 31 December 2007: First full compliance period
- 1 April – 1 July 2007: During the first three month period of producer responsibility, WEEE producers discharged their obligations through a purely financial burden. The Government continued to refund local authorities to dispose of WEEE covered under the Hazardous Waste Regulations 2005 through their established disposal routes, and Government's costs should

269. British Department of Business, Innovation and Skills (BIS), 'The Explanatory Memorandum on European Community Legislation' (March 2002) 5.

270. British Department of Business, Innovation and Skills (BIS), 'WEEE Consultation Part I: Draft implementation of Directives 2002/96/EC and 2003/108/EC on Waste Electrical and Electronic Equipment' (July 2006).

271. Association of London Government. Waste: ALG's response to the Government's consultation on the implementation of the Waste Electrical & Electronic Equipment Directive (WEEED) in the UK. Item No: 15, 17 October 2006, page 3. The Department of Trade and Industry is responsible for interpreting European Legislation relating to waste electrical and electronic equipment.

be met by those producers responsible for hazardous WEEE by means of an 'Exchange' mechanism developed by the DTI

- 1 July 2007: Introduction of full producer responsibility – at the time, the proposal was for the establishment of a network of registered take back centers, the majority of which were likely to be local authority civic amenity sites. The Government decided to tender for a national body to facilitate and manage the Designated Take back Scheme, later identified as UK's only WEEE Distributor Take back Scheme (DTS). The DTS is operated by Valpak WEEE Retail Services and meets the obligations of retailers as an alternative for their obligation to offer in-store take back. Instead of offering free in store back, retailers will make a financial contribution to the DTS, which will be used to assist in the development of WEEE collection facilities throughout the UK.

Finally coming into force in 2007, the Waste Electrical and Electronic Equipment Regulations 2006 (SI 2006/3289) were made by the DTI under section 2(2) of European Communities Act 1972.²⁷² The Regulations were set under the responsibility of the Department of Business Innovation and Skills, and were subject to Amending Regulations in 2007 and 2010. The Regulations transposed the main provisions of Directive 2002/96/EC as amended by the provisions of Directive 2003/108/EC, and were followed by an Explanatory Memorandum, Regulatory Impact Assessment, and Transposition Note.

The WEEE regulations implemented most of the provisions of the WEEE Directive into national law, including the separate collection of household WEEE at the annual rate of 4 kg/capita respecting the ten different product categories. Still based on the Directive, the Regulations prioritised waste prevention, reuse (of whole appliances, above all), recycling and recovery with the purpose of minimizing the amount of WEEE sent to landfill. The terms 'reuse', 'recycling', and 'recovery' were adopted by the UK WEEE regulations with the same purpose as defined by the Directive in its Article 3(d)(e)(f).

The implementation of the Directive meant, for producers, distributors, and retailers the requirement for somehow being involved with the reprocessing of waste electronic and electrical equipment. The local authorities remained responsible for household and business waste collection services, enforcing waste legislation, waste disposal, dealing with fly-tipping, and encouraging good waste management – for instance, recycling – in their areas. However, the new role for producers, distributors and retailers was expected to add to those actions.

272. British Parliament (1972 c. 68). The section 2(2) enables for Government ministers to lay regulations before Parliament to implement required changes to UK law. The EC Act 1972 is the instrument whereby the UK was able to accede to the European Communities (now the European Union).

5.2.2 Actors and roles in EEE's life cycle, according to WEEE Regulations

As the Member States were left free by the Directive to define the most appropriated structure for WEEE collection, the UK opted for the competitive clearing house model. The model transfers the responsibility of reporting, financing and treatment over to the operators of producer compliance schemes, instead of focusing on each producer. The choice for such a structure enabled the UK government to considerably reduce its administrative costs, considering the estimate number²⁷³ of 30 producer compliance schemes against 5750 producers to be registered in the UK. Therefore, under UK's Regulations, every producer must join a producer compliance scheme which has been approved by the Environment Agency (EA) and finance the treatment, recovery, recycling and disposal of WEEE. On the other hand, the operator of each scheme was made responsible for registering its members with the 'appropriate authority', and providing it with 'information on the total amount in tonnes of WEEE that he has been responsible for'²⁷⁴ and 'information on the total amount in tonnes of EEE that each member of that schema has put on the market in the United Kingdom in each compliance period, or part of a compliance period, during which his membership of that scheme subsists.'²⁷⁵ Within the scheme obligations, regulation 22(4)(a) clarifies that 'the appropriate authority shall serve a preliminary notification in writing on that operator of a scheme specifying the amount of the relevant WEEE for which he shall be responsible (...)'.

The treatment of WEEE was designed to be provided by a network of approved treatment facilities (ATFs) and approved exporters (AEs). Those were authorised to issue evidence to the PCS on the amounts of WEEE received and processed. According to Regulation 46(1), in order to 'issue an evidence note in relation to the treatment, recovery or recycling of WEEE', the ATF must have been granted approval by the national regulator²⁷⁶ and, therefore, have become an approved authorised treatment facility (AATF). The same procedure being applied to 'issue evidence note in relation to WEEE exported for treatment, recovery or recycling' on Regulation 46(2), as only the exporter approved by the Environment Agency was authorised.

Another relevant player described in the Regulations were the distributors, required to enable free in-store take back of household WEEE, and to provide consumers with information over the separate collection of WEEE.

273. British Department of Trade and Industry (DTI), 'WEEE Consultation Part III: Partial Regulatory impact assessment for the WEEE Regulations' (July 2006) 2.

274. Regulation 27(1)(a)

275. Regulation 28(1)

276. Regulation 2(1) 'appropriate authority' means (a) the Environment Agency in England or Wales; (b) SEPA in Scotland; (c) the Department of the Environment.

For the distributors, the option of joining the distributor take-back scheme was offered as an alternative to the free in-store take back. However, in any case, distributors were still expected to assume the financial obligations for the collection and transportations of that WEEE, at the same time that PCS were obliged to receive WEEE from private households returned to distributors.²⁷⁷

An important remark relating to this system is the fact that local authorities were not assigned by the Regulations with obligations relating to WEEE collection. Nonetheless, they were allowed to volunteer their recycling centres to become approved designated collection facilities (DCFs) for household WEEE, given the need for a large number of DCFs to be available. In return, the LAs could benefit from a one-off funding from the EEE retailers by way of the Distributors Take back Scheme to receive household WEEE.²⁷⁸

5.3 The Recast WEEE Directive 2012/19/EC

As a result of public consultations and impact assessments prepared by the British Government, the Waste electrical and Electronic Equipment Regulations 2013 came into effect in 2014, replacing the ‘WEEE Regulations 2006’. One of its main focus is EEE of household use, and its declared²⁷⁹ challenge for the UK has been to meet the commitments brought by the Directive in such a way that as little burdensome as possible – particularly for producers and treatment facilities – is created.

Although in the same time frame as the Recast WEEE Directive, the Red Tape Challenge (RTC) from British Government had already carried out different impact assessments to identify the most suitable options to reform the existing WEEE system. After the recast Directive, more public consultations were presented to stakeholders the opportunity to contribute as well as comment on the proposed modifications. The issuing of one final draft revising the WEEE Regulations 2006 was an opportunity to avoid inconveniences in a broad sense. As declared:

The RTC proposals are independent of the WEEE recast changes, but there are links between the two. Our aim is to introduce regulations which deal with both the RTC improvements and recast issues. The use of a common com-

277. Francis O Ongondo and Ian D Williams, ‘A critical review of the UK household WEEE collection network’ (2012) 165(1) *Waste and Resource Management* 13-23, 15.

278. *ibidem*.

279. British Department of Business, Innovation and Skills (BIS), ‘Implementation of the WEEE recast directive 2012/19/EU and changes to the UK WEEE system Consultation’ April 2013, 4. Foreword by Rt. Hon Michael Fallon MP Minister of State for Business and Enterprise

mencement date at the start of a compliance year [1 January 2014] will minimise disruption, regulatory burden and costs to all involved.²⁸⁰

From the Recast Directive, the Government focused on five central changes introduced by the recast:

- Introduction of higher Member State collection and recovery targets and a changed methodology for calculating the WEEE collection rate
- Wider scope for the range of products covered by the Directive
- To lower regulatory and cost burdens on business through the introduction of an ‘authorised representative’ who can fulfil the obligations of the producer
- To establish better controlling of the illegal international trade in WEEE; and
- Retailer take-back requirement of very small WEEE in certain circumstances.

The decision was made to repeal the UK Regulations 2006 as the new regulations would be put in place. In order to implement the changes brought about by the recast, the copy-out principle was used. As a consequence, where the provisions of the original Directive were unchanged by the recast, the language in the new Regulations also remained unaffected.

From the RTC initiative, three options – each of them based on quite different approaches – were compared to the baseline of ‘do nothing’. They were based on best practices from other Member States, added to informal consultation with stakeholders. According to the impact assessment, the three options (except 1) were de-regulatory and could lead to an overall cost saving.

- Option 1: Do nothing (not amending the WEEE Regulations. This option was the baseline to which all other options were compared)
- Option 2: To establish a national compliance scheme
- Option 3: To set a collection target and compliance fee
- Option 4: To establish a matching process of collection sites to PCSs.

The three options (except 1) also had in common the introduction of a ‘de minimis’ threshold for low volume producers of EEE, and offering the option for collectors of WEEE to manage own WEEE streams. The first feature would benefit producers who place less than a certain amount of tonnage on the market by having reduced obligations and not being required to join a producer compliance scheme. The second feature would allow collectors to

280. *ibidem*, paragraph 3(5).

receive the net revenues from materials where they exist, and retract obligation on producers.

In April 2013, a public consultation²⁸¹ was launched on the implementation of the recast Waste Electrical and Electronic Equipment Directive. The focus was for stakeholders and interested parties from all stages of the supply chain to comment on the proposed amendments to the existing WEEE regulations in order to ensure compliance to the recast Directive, and on how to respond to concerns from UK producers of EEE considering the financial obligations under these regulations. The main changes highlighted by the consultation document were: a) Higher Member State collection and recovery targets; b) New methodology for calculating WEEE collection rate; c) Wider scope for the range of products covered by the Directive; d) Introduction of an 'authorised representative' to fulfil the obligations of the producer (consequent reduction on regulatory and cost burdens on businesses); e) Enhanced control over the illegal international trade in WEEE; f) Retailer take back requirement for 'very small' WEEE from private households.

The occasion developed into an opportunity for the Government to include wider changes seeking to simplify the system in general. In October of the same year, the Government delivered its response and indicated a number of major changes to be made. As it could be observed at the response, the changes approached:

- Producer Compliance Schemes would have their collection target based on historic data
- Introduction of a compliance fee, in order to finance to the Government a scheme which fails to meet its collection target
- Introduction of the 'de-minimis' threshold for producers of 5 tonnes
- Option for Local Authority Designated Collection Facilities to elect to treat WEEE.

The first proposal focused on the PCSs' targets and a way for them to be calculated by taking the average of total EEE placed on the market in 2012 and 2013, and deducting estimated non-household, non-obligated household, and WEEE collected by DCFs that op out.

Concerning the introduction of a compliance fee, it has been reported as the most relevant strategy for the UK. Having adopted a modified Clearing House model,²⁸² trading of evidence is carried out to ensure that each scheme

281. British Department of Business, Innovation and Skills (BIS), 'Implementation of the WEEE recast directive 2012/19/EU and changes to the UK WEEE system Consultation' April 2013.

282. Some functions of a Clearing House are performed by the Environmental Agencies (England and Wales - EA, Scotland - SEPA, Northern Ireland - NIEA). Combined with

has financed the correct quantity of WEEE collection and recycling. Nonetheless, there have been problems with forging of evidence and overprices which became a great challenge in the UK. The compliance fee gave the option for PCS which did not achieve their collection targets to pay a fee to the Government instead of having to buy evidence at usually high costs.

The establishing of the ‘de-minimis’ sought to reduce the impact of the costs that the changes brought by the Recast Directive would impose on producers and compliance schemes. The ‘de minimis’ was created to allow smaller producers – those who were eligible – to benefit from an exemption. One of the greatest strategies brought by the new WEEE regulations was the fact that, besides a simplified administrative procedure requested from small producers to comply with (registration directly with the relevant agency for £30/annum) – who represent less than 1% of WEEE on the market – there was also an exemption established for them no longer have the duty to collect household WEEE.

Regarding the Local Authorities (LAs) – who play an essential part in the collection of unwanted items – they were given the choice to retain control over value WEEE streams, being requested only to declare their intentions by 31 January. LAs also received the right to request a PCS to collect its DCF WEEE regardless of location. The offer of greater flexibilities to LAs has been seen as a positive measure which will allow LAs to maximize the potential income from their WEEE collections.

Before the final version of the Regulations had been provided to Parliament, they were revised one last time, more exactly, after the comments to the public consultation and the Department’s responses to them. The old regulations were revoked and the new WEEE Regulation took effect in January 1, 2014, just a few weeks after the ‘government guidance notes’ for the new regulations were published in November 2013.²⁸³ The measures above mentioned are expected to allow for a further development of the WEEE management system in the UK and its collection, treatment and recycling rates.

5.3.1 Producer Responsibilities

Currently, according to the Environment Agency, the Public Register of January 2015 included 3,900 EEE Producers in the UK, and for operating a producer compliance scheme in 2015, the list contained 29 approved compliance schemes.

As transposed from the recast Directive, Regulation 2 informs that

WEEE Settlement Centre (records evidence of WEEE treatment to allow issuance and holdings of Evidence Notes to be monitored).

283. British Department for Business, Innovation & Skills (BIS), ‘WEEE Regulations 2013 - Government Guidance Notes’ November 2013.

producer means any natural or legal person who, irrespective of the selling technique used, including by means of distance communication in accordance with Directive 97/7/EC(e) of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts – (a) is established in a Member State and manufactures EEE under his own name or trademark, or has EEE designed or manufactured and markets it under his own name or trademark within the territory of that Member State; (b) is established in a Member State and resells within the territory of that Member State, under his own name or trademark, equipment produced by other suppliers, a reseller not being regarded as the ‘producer’ if the brand of the producer appears on the equipment, as provided for in sub-paragraph (a); (c) is established in a Member State and places on the market of that Member State, on a professional basis, EEE from a third country or from another Member State; or (d) sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or in a third country.²⁸⁴

If a business meets the definition, and places EEE onto the UK market, registration is mandatory. Since 2014, there are two levels of registration: for producers placing more than 5 tonnes a year of EEE onto the UK market, the procedure of registering through a Producer Compliance Scheme remains; for producers that place less than 5 tonnes a year onto the UK market – which are classified as small producers – it is given the option to directly register with one of the 4 environmental Agencies (EA, SEPA, NIEA, NRW). The ones that choose for such option have no responsibilities for financing the collection and treatment of household WEEE, but still have the same responsibilities as the large producers where it comes to non-household WEEE.

Beyond registering, producers are obliged to mark all their products with the crossed out wheelie bin symbol, as well as with their ‘Producer Identification Mark’. Usually known as the company logo, the producer identification mark identifies the company as the producer. ‘Placed on the market’ is defined by the Agency based on the Blue Book²⁸⁵ and revolves around the expression ‘being made available to’. According with the WEEE Regulations, placing EEE on the UK market and not registering it is an offence. For companies selling to end users in the UK although located overseas, the procedure is to register through an Authorised Representative.

In the Part 7 of the Regulations, charges were defined for producer compliance scheme members. Regulation 59(1) specified the ‘application charge’, which configures one of the conditions for an application for approval of a proposed scheme (regulation 55(4)(c)(i)) and has the value of

284. United Kingdom, Statutory Instruments 2013 No 3113 Environment Protection - The Waste Electrical and Electronic Equipment Regulations 2013. Regulation 2, 10-11.

285. European Commission, ‘The ‘Blue Guide’ on the implementation of EU products rules 2016’ OJ C272/1, 18.

£12,150 for each scheme. The other charge refers to the ‘annual producer charge’ which must be paid to the appropriate authority and varies according to the categories of scheme members: a) £30 for each scheme member who is not required to be registered under the Value Added Tax Act 1994(a); b) £30 for each small producer; c) £210 for each scheme member who is required to be registered under the Value Added Tax Act 1994 and who had a total turnover of £1 million or less in the last financial year; and d) £445 for each scheme member who had a total turnover of more than £1 million in the last financial year.

5.3.2 Distributor and Retailer Responsibilities

The British WEEE Regulations 42 to 46 (Part 5) have established clear responsibilities for distributors of electrical equipment, which also denote retailers and distance sellers. One of the main responsibilities is the free of charge take back guaranteed for WEEE from private household. This stands for the obligation of distributors to provide a way for their customers to dispose of old household electrical and electronic equipment when selling them a new item of the same type – regardless of brand. The obligation implies, therefore, that all types of electrical and electronic equipment eventually sold by a specific retailer also must be taken back by him.²⁸⁶

The method of sales, whether direct or by internet, mail order or telephone, does not wave the distributor from the responsibilities brought by the WEEE Regulations. To provide a free, in store, take back service to the customers or, an alternative free take back service is among them. Although charging transport costs is allowed in the case the items are collected from customers’ houses. In the case the distributor does not have or wish to provide his own take back service, he is expected to join the Distributor Take back Scheme (DTS). The DTS is operated by Valpak Retail WEEE Services Ltd. The DTS supports a network of Designated Collection Facilities where consumers can dispose of their household WEEE free of charge. The activities under their responsibility include collection and distribution of member’s funding, compilation and maintenance of the DCF register and the development and provision of consumer information to retail members to ensure that they meet all their obligations under the Regulations.

Currently, the procedure to join the DTS is to pay a fee which covers his WEEE obligations until January 2017 or longer. The price paid for the fee varies according to the amount of electrical and electronic equipment sold, and is directed to support the recycling centers managed by local authorities. BIS appointed the Vehicle Certification Agency (VCA) in May 2007 to enforce the consumer facing provisions of the WEEE Regulations. On the 1

286. United Kingdom, Statutory Instruments 2013 No 3113 Environment Protection - The Waste Electrical and Electronic Equipment Regulations 2013.

April 2015, all Waste Electrical and Electronic Equipment activities previously carried out by VCA were transferred to the Department for Business, Innovation & Skills (BIS).²⁸⁷

Under the new WEEE Regulations, distributors who decided not to join the DTS must also offer free take back for ‘very small WEEE’ – defined by having less than 25cm on their longest side – if they have a sales area of EEE greater than 400 square meters. This obligation does not require the one-to-one basis, meaning that in the case for small electronic equipment, any end user should be provided of the take back system for free, no purchases needed.

For disposing the waste collected, the possibilities are either to transport it themselves to an Approved Authorised Treatment Facility (AATF) or to contact a producer compliance scheme (PCS). In the first case, there is the need for a waste carrier license and to follow rules on transporting hazardous waste. For the second option, the PCS will arrange for the waste to be collected and probably charge for the collection and transportation to the AATF. An important requirement from the WEEE Regulation No 45, as a reflex of the Directive, is for distributors to keep records of all electrical and electronic waste collected and disposed,²⁸⁸ as well as how they inform customers of their take back scheme. A suggested format for record keeping is also offered by the Government, and includes the following fields so all the necessary information is made available: a) date items were received; b) number of units; c) number of units returned to PCS; d) date returned to PCS; e) name of PCS; f) four year date.

The UK included as part of the distributor’s responsibility the duty to inform. Regulation 44 establishes that ‘A distributor who supplies new EEE will make information available in writing to users of EEE in private households (...)’. The users of EEE in private households should be informed of the requirement to minimise the disposal of WEEE and to achieve a high level of collection of WEEE for treatment, recovery and environmentally sound disposal; obtain details concerning the collection and take-back systems available to them; the importance of their involvement to promote the reuse, recycling and other forms of recovery of WEEE; the potential effects on the environment and human health as a result of hazardous substances contained in EEE, and the meaning of the symbol of a crossed out wheeled bin.

The obligation to record keeping is also expected to be accomplished by distributors who receive WEEE in the frame of a take back in store, and the ones that have joined the DTS. For the ones providing their own take back, it

287. According to Chapter 1(4) of the WEEE Regulations 2013

<www.dft.gov.uk/vca/enforcement/vca-enforcement-redirect.asp> accessed 14 June 2015.

288. Under Part 5 of The Waste Electrical and Electronic Equipment Regulations 2013, regulation 45.

is mandatory to keep a record of units of WEEE from private households that are returned to him. But all distributors, with or without take back in store, must keep a record of the information made available to their users of EEE in private households.

Still relating distributors, a final topic to be mentioned is the right to ‘return WEEE from private households free of charge to the system that has been set up by an operator of a scheme (...) for the purposes of complying with that of a scheme’s obligations in relation to WEEE from private households under regulation 28.’ Regulation 28 approaches the financing obligations of producers towards household WEEE, on what concerns the costs of collection, treatment, recovery and environmentally sound disposal of WEEE.

5.4 Particularities of the British implementation of the Directives

As mentioned earlier, the UK Government opted for a copy-out approach when implementing the Recast Directive. Hence, most of the provisions remained unchanged when transposed to national legislation, with the exception of one relevant fact.

The prohibition, by the UK Government, for the use of visible fees by producers on the EEE put on the market. As informed by the Environment Agency, preventing producers from using the fee configured a declared strategy to motivate competition among producers. The Recast Directive in its Article 14(1) – under the title ‘Information for users’ – however, did bring the possibility that MSs choose for themselves to implement visible fees on EEE. A closer look, therefore, would reveal the choice for the application (or not) of Article 14(1) as a result from lobbying interests occasionally mixed with specific national policies, as, for instance, approaching consumer awareness.

Great discussion was also focused on the difference existing between the Guidance provided by the British government (BIS) and the last FAQ²⁸⁹ published by the European Commission on the Recast Directive concerning the definition of household and non-household WEEE – mainly ‘dual use’ items which could conceivably be used in business or by consumers, such as PCs. In the former, it was stated that WEEE from businesses should be considered as from a household source if similar in nature to that produced by households. UK’s definitions of businesses and household WEEE, however, focused on the quantity of WEEE being presented for collection.

Following on from discussions with key stakeholder groups, the Department of Business, Innovation & Skills informed the change in the interpreta-

289. European Commission, ‘Frequently Asked Questions on Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE)’ (DG Environment 2014)
<http://ec.europa.eu/environment/waste/weee/legis_en.htm> accessed 7 October 2015.

tion used at the statutory guidance for the 2013 Regulations until then. The modification sought to have the legal interpretation of the UK's 2013 WEEE Regulations to be in line with the EC FAQ position, to look at the nature of the product to determine whether the (W)EEE is classified as household (B2C) or non-household (B2B). The change meant that if EEE could be used in both households and in businesses it would then be considered dual-use EEE and would need to be reported as B2C by the producers putting them on the market. While reporting of dual use EEE was programmed to take place during 2015, to allow for schemes, producers and treatment facility operators to have sufficient time to adjust to the changes (including different distribution of cost amongst producers), the collection obligations – and the cost implication – were set to be triggered only from 1 January 2016. During the year of 2015, the policy driven by 'dual use' – of an improved classification of business and household electrical goods and, consequently, greater producer compliance – was declared as an important factor to lead UK to meet higher WEEE collection targets set by the EU.²⁹⁰

5.5 Reported Problems

A few months after the introduction of the UK WEEE Regulations in 2007, some adaptation problems could be identified. Low public awareness of WEEE recycling, illegal exporting, and – specifically concerning compliance schemes – intentional over-collection resulting in excessive evidence trading were the most evident.

The evidence matters related to compliance schemes received close attention and were submitted to a judicial review²⁹¹ which, in July 2009, although not supporting the compliance scheme's complaint in question, confirmed that intentional over-collection of WEEE by compliance schemes in the UK was unlawful. The reasoning clarified that over-collection being performed did not mean more WEEE being collected, as the amount of WEEE available for collection had been the same. What happened was that if a compliance scheme collected more than its due percentage shares; other schemes would be forced to buy evidence of collection from it. As a result from this judicial review, all compliance schemes were obliged to agree on mutually acceptable collection and balancing arrangements in advance. Schemes collecting more – or less – WEEE than specified in their plans, with no prior arrangement, are

290. Stated by Steven Andrews, head of environmental regulation at BIS, at the WEEE Conference in London, June 4 2015. Tom Goulding, 'BIS: Future WEEE targets "very achievable"' *Letsrecycle.com News Business* (5 June 2015) <www.letsrecycle.com/news/latest-news/bis-future-weee-targets-very-achievable/> accessed 20 September 2015.

291. *Repic Ltd, R (on the application of) v The Scottish Environment Protection Agency & Anor* [2009] EWHC 2015 (Admin) (31 July 2009). From this Judicial Review, it came out the clarification on the need for scheme market share obligations to be satisfied by the collection of WEEE and not the trading of evidence.

considered to be in breach of their ongoing conditions of approval and committing a criminal offense.

Still concerning the shortcomings, it was observed that even though the Directive had been transposed to national law, during its first years, an expressive number of businesses, retailers, and citizens were still not aware of the responsibilities and procedures regarding WEEE. Engaging the public proved to be extremely relevant for enhancing the proportion of WEEE collected by councils and actually treated. For this reason, promoting guidelines for retailers and business, to provide them with information on how to correctly dispose WEEE for collection to be passed on to end-users coming to their shops, added to the involvement of local authorities – as those are important players in communicating with householders, given their proximity – became a strong strategy in the UK during the years following the creation of the WEEE regulations.

Proper and effective collection for reuse was another point of struggle identified during the implementation process. The obligation brought by regulation 24, which defined for Producer Compliance Schemes to ‘ensure that systems are set up to prioritise the reuse of whole appliances’, proved to be considerably challenging. The main obstacle was reported to be the lack of awareness and engagement of the relevant institutions. Thus, the recognition and recommendation for the development of partnerships with reuse organisations in order to actually achieve the desired outcomes.

Finally, the declared choice made by the UK Government for a ‘copy-out approach’ when implementing the Directive caused a replication of some of the ambiguities already identified in the Directive itself. This fact was highlighted as responsible for creating extra difficulties to a practical implementation of the new UK law. For instance, the expression putting equipment ‘on the market’ proved to be rather confusing. Although frequently used throughout the text of the WEEE Regulations, the exact meaning of the phrase was not defined in it, neither in the WEEE Directive. As a consequence, the liability for treating WEEE – which relied on whether the equipment was originally ‘put on the market’ prior to, or after, 13 August 2005 – was compromised, considering that it could have different interpretations, as, potentially, could mean put on the market in the EU in general, or the relevant national market. Or, if considering the point when the goods arrive in the jurisdiction or even, when it is finally offered for sale. The Guidance Notes of November 2009 (BIS)²⁹² adopted EU’s interpretation²⁹³ of a similar phrase ‘placing on the market’ defined as when a product is ‘made available

292. British Department of Business, Innovation and Trade (DTI), ‘WEEE Regulations 2006 - Government Guidance Notes’ November 2009, 31 paragraph 103.

293. European Commission, ‘Guide to the implementation of directives based on the New Approach and the Global Approach’ (Office for Official Publications of the European Communities 2000) 18.

for the first time', considered to take place when a product is transferred from the stage of manufacture with the intention of distribution or use on the Community market. Nevertheless, it is worth noting that EU's definition itself has faced a number of exceptions.²⁹⁴

5.6 Complementary Policies and Actions

5.6.1 The Red Tape Challenge

Among the methods used by the British Government to approach stakeholders in the matter of WEEE was, mainly, to call for their participation on public consultations. These were mostly performed by the Department for Business, Innovation & Skills, as a result of the Red Tape Challenge. The Red Tape Challenge is initiative adopted by the British Government aiming at reviewing laws and rules in the national legal system and was launched in April 2010. Both businesses and the public were given the opportunity to express their opinion on the regulations that impact on their businesses. Concerning the discussion about WEEE, it took place in the 'Environment Theme', which was created in September 2011 as one of the Themes of the RTC. The outcomes of the Environment Theme were announced²⁹⁵ on 19 March 2012 and indicated, through this resource, that large producers of electrical and electronic equipment had concerns over the amount they had to pay for the collection, treatment, recovery and recycling of their market share of WEEE. Besides the large producers, the smaller producers presented their complaint towards the disproportionate administrative costs associated with complying with WEEE Regulations. BIS compromised to consult on a range of options for changes to the existing regulations, and the regulatory changes to address such concerns were introduced by the new WEEE Regulations in January 2014.

5.6.2 Reducing and Managing Waste

As previously observed in this study, the revised EU Waste Framework Directive²⁹⁶ was important for establishing the 'waste hierarchy' and a different perception of how to treat waste. A perception not only focusing on proper collection, and preference for preparing for reuse, but also a great attention on avoiding waste production as a form of preventing its environmental im-

294. Mark Tuner and Dominic Callaghan, 'UK to finally implement the WEEE Directive' (2007) 23 Computer Law & Security Report 73, 76.

295. Department for Environment, Food and Rural Affairs Red Tape Challenge – Environment Theme proposals, March 2012, 4.

296. Directive 2008/98/EC (Waste Framework Directive)

pact. The Waste Strategy 2000²⁹⁷ will define the Government's vision for sustainable waste management in England and Wales until 2020. Included in its aims, was the reduction of the amount of waste going to landfill, by a definition of targets for recycling and composting of municipal waste, added to the strategy of developing new and stronger markets for recycled materials. Influenced by the EU Waste Framework Directive, the Government Review of Waste Policy in England 2011²⁹⁸ defined 13 commitments that would lead the UK towards a zero waste economy. The review prioritised measures to manage waste in line with the waste hierarchy and reduce its environmental impact.

5.6.3 Government Guidance Notes

The guidance is informed to address to all businesses and individuals – including the ones in the public and third sector – involved in the sale, purchase, and disposal of electrical and electronic equipment. It consists of instructions over the requirements of the relevant legislation and contains helpful material such as FAQs and a decision tree to help businesses and individuals to comply with the law and reduce the impact that waste electrical and electronic equipment has on the environment. Issued by the Department for Business Innovation & Skills since the WEEE Regulations 2006, the first guidance is from November 2009 and the current one, from March 2014.²⁹⁹

5.6.4 Code of Practice

As part of the powers and duties of the Secretary of State, both Regulations 2006 and 2013 specify a Code of Practice to be prepared and issued, after consultation of persons and bodies representatives of the interests concerned. The purpose of the Code was set – and remains until this date – as to provide practical guidance on the minimum standards which must be met by operators of designated facilities, and by operators of producer compliance schemes that collect WEEE from private households from a designated collection facility. The penalty for not complying with the minimum standards, informed by the Code, is the possibility of withdrawal of approval of either PCS or DCF status under the Regulations.³⁰⁰

297. Waste Strategy 2000, Part 1 and Part 2, Cm 4693-1, Cm4693-2.

298. Available at <<https://www.gov.uk/government/publications/government-review-of-waste-policy-in-england-2011>> accessed 8 October 2015.

299. 'WEEE Regulations 2006 Government Guidance Notes' (n 292) and 'WEEE Regulations 2013 Government Guidance Notes' (n 283).

300. Under Regulation 57 in the WEEE Regulations 2006 and Regulation 72 in the WEEE Regulations 2013.

5.6.5 Enforcing legislative compliance

As a strategy to ensure that retailers of EEE played their part in assisting UK household users to dispose of end-of-life electrical and electronic equipment, since July 2007 VCA became responsible for distributor responsibilities of the WEEE legislation. The Vehicle Certification Agency (VCA) is UK's designated agency from the Department of Transport to provide certification for vehicles, and a leading management systems certification body. The Agency was chosen for its extensive experience of enforcing legislative compliance and a regional network of Enforcement Officers.

5.7 Conclusions

As a result of the investigation performed in this chapter, interesting national instruments and strategies developed during the period of the transpositions of the WEEE and Recast WEEE Directives in the UK could be identified. However, it is important to have in mind that, as reported by the Environment Agency,³⁰¹ most of the modifications included in the WEEE Regulations 2013 for improvement of the UK WEEE System resulted from the findings of the Environmental Theme of the Government's Red Tape Challenge (RTC), and not directly from the text of the Recast WEEE Directive, as many would assume. Nonetheless, the results from a combined process of revision of the national WEEE Regulations have been promising.

One of the most remarkable actions, recently having its methodology defined, was the definition of a Compliance Fee for PCSs. It tackles the problems PCSs were facing concerning their collection targets by avoiding PCSs who were not able to collect their obligated amount of WEEE having to buy overpriced evidence notes.

Still focusing on the producers, the 'de minimis' strategy for small producers has been reported as a successful measure adopted by the Government, once substantial administrative burden has been taken away from small producers.

A major difference observed in the transposition of the Recast Directive was the choice made by the UK Government on prohibiting the use of visible fees by producers on the EEE put on the market, a declared strategy to motivate competition among producers.

Further, a legal provision on the possibility for distributors to join a Distributor Scheme represented a viable alternative for retailers to avoid the

301. As informed by Consultation of April 2013 on the Implementation of the WEEE recast Directive 2012/19/EU and changes to the UK WEEE System, and Personal interview in 19 February 2015 with Robert Scarpello, Environment & Business Advisor leading on WEEE at the Environment Agency.

costs of in-store take back, and, consequently, managing room for storage and organising later collection of that WEEE.

Finally, as shown by this chapter, side strategies such as the red tape challenge and guidance notes, codes of practice, consultations, and impact assessments provide a close look at real demands from the stakeholders involved in the WEEE system as well as a dynamic interpretation and application of the WEEE Directives.

The Dutch Transposition and Implementation of the WEEE Directives

6.1 Introduction

The Netherlands has a long tradition of developing innovative information and communications technologies (ICTs). To mention only a couple of examples, Dutch researchers have played an important role in the development of the compact disc (engineers from Phillips) as well as of the global standard for wireless internet (developed in the city of Nieuwegein). As it could be no different, problems related to the amount of waste electrical and electronic equipment produced in such a technological society became quite a striking reality as a consequence of the massive use of ICTs.

In 2004, the European WEEE Directive introduced legislation for e-waste take back systems which should be implemented into Member States' national legal framework no later than August 2006. Apart from Greece, the Netherlands was the only MS to meet the deadline, when the WEEE Directive was transposed to national law on 13 August 2004 with no greater impact caused on the Dutch system for WEEE Management. The explanation for such a simpler process than most of the ones occurred in the EU lies in the fact that the Netherlands was one of the pioneers of e-waste legislation, having the concept of producer responsibility of electrical and electronic equipment existing in the Dutch regulations since 1999, when a nation-wide system for the collection and recycling of end-of-life EEE was set up. The Dutch government³⁰² adds to the explanation the argument that the Directive was broadly inspired by the Dutch approach, which, to some extent, contributed to the small need for adaptation of the national laws.

Published in 1998,³⁰³ the Disposal of White and Brown Goods Decree was the first legal rule to establish requirements for the take-back system of

302. Dutch Ministry of Infrastructure and the Environment (IenM), 'Handboek EU-milieubeleid en Nederland: De omzetting in nationale regelgeving' (1 March 2014) <www.infomil.nl/onderwerpen/integrale/handboek-eu/afval/> accessed 7 July 2015.

303. Staatsblad van het Koninkrijk der Nederlanden. Jaargang 1998 Nr. 238 Gepubliceerd op 28 april 1998. Besluit van 21 april 1998, houdende vaststelling van regels voor het na gebruik innemen en verwerken van wit- en bruingoed (Besluit verwijdering wit- en bruingoed) <http://wetten.overheid.nl/BWBR0009561/geldigheidsdatum_18-03-2015#> accessed 10 July 2015.

WEEE. The decree focusing on the specific categories of end-of-life EEE outlined the responsibilities of producers towards this type of waste. As part of the development of the Dutch system for WEEE Management, in 1999 the NVMP Association (Netherlands Association for the Disposal of Metal and Electro-technical Products) was founded to collectively represent product associations³⁰⁴ of e-waste interests.

Ever since the beginning of the set-up of the system for managing and treating e-waste in the Netherlands, the Ministry for Housing, Spatial Planning and Environment – nowadays the Ministry of Infrastructure and the Environment (IenM)³⁰⁵ – has been the responsible for ruling, controlling and providing incentives for compliance with e-waste related policies. Its main concerns are the inspection and enforcement of the provisions of the WEEE Directive on EEE producers and importers, and the illegal export of WEEE, this last being directly connected to the inspection of the Waste Shipment Regulation.

Throughout the years, the Dutch system remains as one of the most successful ones concerning targets for collection and treatment of WEEE in Europe. The statutory collection target for WEEE of 4 kg per capita defined by the WEEE Directive has been largely achieved in the Netherlands. In 2007,³⁰⁶ the amount collected and treated was already of 5.7 kg per inhabitant of e-waste per year while, in 2010,³⁰⁷ around 7.5 kg of WEEE per inhabitant was reported as being collected and treated by the main producer schemes in the Netherlands at the time, NVMP/Wecycle and ICT~Milieu. In 2012, ICT~Milieu joined NVMP/Wecycle's collection system, forming the leading scheme in the country. In the same year, the first competitive scheme – WEEE NL – was created as a private limited company, being granted a permit from the Dutch government to perform its activities in 2013.

304. Brown Goods Association (SBG), LightRec Association (SLR); Association for the Recycling of Metal and Electrical Products (SMR); Association for the Processing of Central Ventilators (SVCV); Association for the Disposal of Electrical Tools (SVEG); White Goods Association (SWG).

305. The Ministry of Housing, Spatial Planning and the Environment (Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieu or VROM) was responsible for policies on public housing, spatial planning, the environment and the housing of national government agencies. In October 2010 it was merged with the Ministry of Transport, Public Works and Water Management into the new Ministry of Infrastructure and the Environment (IenM).

306. CBS-Statline 2007.

307. Jaco Huisman and others, 'The Dutch WEEE Flows' (United Nations University, ISP – SCYCLE 2012) 4.

6.2 The WEEE Directive 2002/96/EC

6.2.1 The Process

In 1989, white and brown goods were already identified as a special waste category in Dutch environmental policy. Further in 1992, in the context of attempts to reduce waste and the recycling of materials, the Ministry of Housing, Spatial Planning and the Environment (VROM) sought for an agreement with producers and suppliers of white and brown goods concerning the disposal of their products. From 1992 to 1994, a process of intense negotiation took place among members of the target group, the government, and third parties. However, the goal of the process – the signature of a covenant – was not achieved. The outcome was influenced by the fact that producers were aware of the rising concern of other MS on the matter. To settle for a Dutch legislation on the matter would most likely force producers to adapt twice, thus the choice to await for an homogeneous legislation defined at a European level instead of having to adjust to a Dutch law which soon would be replaced and lead to extra costs on adaptations.

Nonetheless, once the signature of a covenant proved to be unsuccessful, the government followed with the intent of regulating the management of WEEE and decided to draft the Disposal of White and Brown Goods Decree. The Decree came into force on 1st of January 1999, and determined for the sector to set up a system for the disposal of white and brown goods in cooperation with the municipal authorities and distributors.³⁰⁸ Initially, electrical electronic equipment was referred to in the Netherlands as white and brown goods, as defined by the Decree. The term then was a collective name for electrical appliances for domestic or commercial use, including office equipment such as computers, fax machines, telephones and alike.

On 13 August 2004, the Decree was revoked and replaced by the WEEE Management Decree (BEA)³⁰⁹ and WEEE Management Regulations (REA).³¹⁰ The new legislation was a result of the transposition of two European Directives, the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE) and the Directive on the Restriction of the Use of Certain Hazardous Substances 2002/95/EC (RoHS). The new legislation put in place not only regulated the restriction for the use of certain hazardous substances such as lead, mercury and cadmium in EEE, but also expanded the

308. Bressers HTA, Immerzeel E and Ligteringen JJ, 'The Disposal of White and Brown Goods in the Netherlands' in Marc Declercq (ed.), *Negotiating Environmental Agreements in Europe: Critical Factors for Success* (Edward Elgar Cheltenham 2002)218.

309. Besluit beheer elektrische en elektronische apparatuur, stb 2004, nr. 340, withdrawn by stb 2014, 239.

310. Regeling beheer elektrische en elektronische apparatuur, stcrt 2004, nr. 142, withdrawn by stcrt 2014, nr. 2975, art. 24.

provisions already adopted by the Dutch legislation for producer responsibility of waste electrical and electronic equipment.

The process of drafting the two directives into Dutch law involved the main stakeholders and, according to VROM – responsible for transplanting the Directives into the Dutch legal framework – BEA and REA were drawn up in consultation with municipalities and industry. For several times the draft legislation was submitted to and discussed with representatives of the municipalities, municipal cleaning services, retailers and manufacturers. The least onerous performance possible within the limits of the European regulations was finally chosen.³¹¹

In order to assure that WEEE would be collected and treated according to the provisions of the WEEE Directive, the take-back organisations at the time – Wecycle and ICT~Milieu – signed voluntary agreements with the municipalities. The covenants contained provisions to perform correct separate collection and storage of WEEE; to dispose of WEEE to the take-back organisations (only WEEE for reuse by Dutch households could be delivered to reuse/repair centers); to register incoming and disposed WEEE; to provide containers for collection of WEEE to municipalities; to empty full containers within two working days; to provide figures on the collected weight of WEEE.

6.2.2 Actors and roles in EEE's life cycle according to the implemented legislation from Directive 2002/96/EC

Besides producers, municipalities are the main actors of WEEE collection in the Dutch system and essential links in the WEEE chain. Along with recyclers, municipalities have been legally defined as the ones responsible for taking-back private households' WEEE (free of charge) ever since the Disposal of White and Brown Goods Decree.³¹² In order to accomplish this obligation, municipalities are obliged by law and are expected to have at least one location available (municipal civic amenity) for households to discard e-waste, among others.

In the Netherlands there are about 300 municipalities³¹³ which operate collection points as one of the options available for consumers to dispose of their WEEE free of charge. Other options made available for the consumers are the old-for-new basis, small WEEE free of charge at big stores, and, de-

311. Vaststelling van de begrotingsstaat van het Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (XI) voor het jaar 2004. Tweede Kamer, vergaderjaar 2003–2004, 29 200 XI, nr. 95, 4.

312. The Disposal of White and Brown Goods Decree, §3 Individual Commitments, article 6(1)(2).

313. See Centraal Bureau voor de Statistiek at <www.cbs.nl/nl-NL/menu/methoden/classificaties/overzicht/gemeentelijke-indeling/2015/default.htm>.

pending on the municipality, disposal next to the public bins (which will all be discussed further in this chapter).

Following the provisions of the 2002/96/EC Directive, the Dutch legislation established that distributors (in a broad sense of the term: wholesalers, retailers, and distributors) add to the Dutch chain as responsible for taking-back e-waste from consumers once selling a new similar product ('old-for-new' basis). However, most of the take-back is performed by operators of retail shops, existing in approximate number of 3.000³¹⁴ in the Netherlands. Retailers have contracts with a compliance scheme so that the equipment received by end-users can be handed over to recyclers, which in turn are also under contract with the compliance scheme. In the case of retailers with no contract with a compliance scheme, there is the legal possibility for them to sell WEEE to local or regional metal scrap processors.

Consumers are expected to attain to the correct disposal methods for their end-of-life EEE either at the civic amenity site of the municipality or with the distributors (mostly retail shops). In most municipalities there are also the possibilities for disposing WEEE by means of a door-to-door collection or charity initiatives. In this sense, households can also choose to give or sell WEEE to door-to-door collection, mainly available in cities. However, driven by high metal prices, informal collection pathways exist and, most likely, the collected WEEE will not be handed over to the system of the compliance schemes. Within the charity initiatives possibility, there is often close cooperation with municipalities and businesses. As a main function, they sell second hand EEE to other consumers, added to the possibility of exporting some of them.

6.3 The Recast WEEE Directive 2012/19/EC

Transposed to the Dutch legislation in February 2014,³¹⁵ the Recast WEEE Directive was mostly a literal transition of the EU text into national law. At the occasion, according to the State Secretary³¹⁶ of Infrastructure and the Environment, the directive was transposed to the Dutch Regulations as strictly as possible in order to do justice to European harmonization in relation to waste electrical and electronic equipment. Nonetheless, despite of the identical transposition there are two specificities to be noticed at the Dutch imple-

314. Jaco Huisman and others (n 307) 11.

315. Regulation of the State Secretary of Infrastructure and the Environment, of 3 February 2014, No IENM/BSK-2014/14758, establishing rules on waste electrical and electronic equipment (Regulation on waste electrical and electronic equipment) <<https://zoek.officielebekendmakingen.nl/stcrt-2014-2975.pdf>> accessed 3 May 2015.

316. Regeling van de Staatssecretaris van Infrastructuur en Milieu, WJ Mansveld, van 3 februari 2014, nr. IENM/BSK-2014/14758, houdende vaststelling regels met betrekking tot afgedankte elektrische en elektronische apparatuur (Regeling afgedankte elektrische en elektronische apparatuur).

mentation of the Recast Directive. Firstly, the fact that the provision from the Directive that authorised the possibility for using visible fees on EEE was not transposed. Secondly, when compared to other MS, the set-up of the Dutch national register for EEE producers was considerably later; only undertaken in 2014.

The removal of visible fees on EEE was scheduled by the 2002/96/EC Directive and inserted into the Dutch legislation by its legal transplantation into article 11 of the WEEE Management Regulations.³¹⁷ More specifically, on article 11(7) and (8) a progressive removal of the fee for financing waste management of historical e-waste was programmed for 14 February 2013 (EEE falling under category 1 of Annex IA Directive 2002/96/EC), and for 14 February 2011 (EEE falling under categories 2 through 10 of the same Annex). For costs related to waste management of WEEE from products put on the market after 13 August 2005, article 11(6) forbade that those would be made known to buyers as a separate item.

Regarding the late establishment of a national register, the reason lies in the fact that a central register of producers capable of gathering a great majority of registrations was already existing in the Dutch WEEE system ever since the Decree from 1998. The Wecycle collective scheme had been playing the role of a central register since most of the producers and importers were registered by its own register system. Furthermore, this scheme was collecting and recycling 8 kg of WEEE per person, in a time when the target of the Directive was still of 4 kg per person, the Dutch government considered the Wecycle results as sufficient to meet the European standards.³¹⁸ For this reason, there was no need for another register system to be created. Yet, two relevant facts seem to have influenced a change of strategy: the recast directive and the establishment of a competitive scheme authorised to operate at the WEEE system. The Recast Directive brought the reduction of administrative costs as one of the main objectives for the management of WEEE. Annex X of the Recast Directive clarified which data is expected from producers at the registration system. In the past, as the definition for specific information was non-existing at the first WEEE Directive Member States defined it by supplementary legislation. The new collective system taking place in the Dutch scenario, the WEEE Nederland (WEEE NL), seems to have contributed for the decision for the set-up of a national register. WEEE NL was authorised by the Ministry of Infrastructure and Environment as a producer take-back scheme on 7 February 2013³¹⁹ and currently is the only other B2C take back system competing with NVMP/ICT~Milieu (Wecy-

317. Stscr 2004, 142. 28/07/04, 26 – Article 11(6)(7)(8).

318. Interview with Renee Sondervan, Senior Policy Advisor, Ministry of Infrastructure and the Environment (Skype video call 4 May 2015).

319. Permit issued under Case No PBAEA12012.

cle).³²⁰ The existence of two collective schemes managing household e-waste would no longer allow for information to be centralized. The registration system was finally established as an independent foundation from the collective schemes.

The Register was established in February 2014³²¹ as an independent foundation delegated by the Dutch Government to perform the task of establishing and managing a register for (discarded) electrical electronic equipment in the Netherlands. The activities assigned for the National (W)EEE Register were specified on Article 4 of its statutes, where different topics were listed regarding monitoring of information, reporting, publishing, providing support, among others related to the registration of producers and processors. In this context, the Register performs the collection and aggregation of that data and makes it available for reporting to the Ministry of Infrastructure and Environment, and for preparing for enforcement by the Dutch Human Environment and Transport Inspectorate. Data referring to the figures of EEE and WEEE on the Dutch market, and the material reuse of WEEE are also provided by the National (W)EEE Register.

As explained by the Ministry of Infrastructure and the Environment, a registration office was established ‘not only for registration of products put on market but also for registration of products recycled by any WEEE recycler in the Netherlands, also those acting in the ‘free’ market. WEEE recyclers need to comply with the independent CENELEC standards on WEEE treatment’. Therefore, a particularity from the Dutch national register to be noticed, also differing from the previous system, is the fact that while producers register their ‘put on market’, also recyclers are requested to register the volumes of treated WEEE. The provisions brought by Article 16(4) of the Recast Directive requested for MS to ensure a national register of producers and to collect information of (W)EEE put on the market, collected and prepared for reuse, recycled and recovered. If compared with the content of statement from the ministry, it is noticeable that the Dutch concern with the WEEE flows led to a broader national register than initially predicted by the Directive: a national register which includes producers and importers of electrical appliances and low energy bulbs, as well as recyclers, all obliged to register and to report, and which does not rule out the possibility for the inclusion of other actors involved in the cycle of WEEE management.

6.3.1 Producer responsibilities

In the Netherlands, there are currently 1934 reported producers registered at the National (W)EEE Register, 34 individual registers and the rest distributed

320. In the ‘Compliance’ section, at <www.weee.nl> accessed 15 July 2015.

321. Oprichting stichting of vijf februari tweeduizend veertien FR/at 61386. Van Buttingha Wichers notarissen. Foundation established by notarial act on February 5, 2014.

in four collective schemes: Wecycle (1518), RTA (274), WEEE Nederland (91), and PV Cycle (12).³²²

Producer responsibilities are directly and extensively specified on Articles 6, 8, 10, 13, 14, 15, 16, 19, 21 of the Regulation on WEEE.³²³ Those bring identical provisions as the ones defined by the Recast Directive. The possibility for producers to set up their own take-back system for WEEE from private households is brought by Article 6 ‘on condition that these systems are in accordance with the objectives of the Directive 2012/19/EU’. Articles 8 and 14 combined approach the producer responsibility towards the financing of the collection, treatment, recovery and environmentally sound disposal of WEEE produced ‘not being WEEE from private households, so far as this WEEE was placed on the market after 13 August 2005.’³²⁴ Adding to it, there is the authorisation for contrary to the previous in the case ‘producers and disposers of waste may agree on alternative finance arrangements’.³²⁵ Meanwhile, Article 13 describes the obligation to finance WEEE from private households, also varying according to the placement on the market being before or after 13 August 2005. Just as specified at the Recast Directive, producers have full responsibility for products placed after that date, while for products placed before that date, proportional responsibility is expected according to his market share at the time when the waste management costs arise.

Article 10 transplanted the Recast Directive in specific details concerning collection rates according to each period. For this reason, the full Article is here included:

A producer shall ensure that:

- a. in 2014 and 2015, his share in the collection target of at least 4 kilograms of WEEE from private households per inhabitant per year will at minimum be collected and processed on its behalf in accordance with the proportion of the average weight of EEE placed by it on the market in the relevant year in the Netherlands;
- b. from 2016, WEEE weighing a minimum of 45% of the average weight of EEE placed by it in the market in the Netherlands in the three preceding years will be annually collected and processed on its behalf;
- c. from 2019: 1°. WEEE weighing a minimum of 65% of the average weight of EEE placed by it in the market in the Netherlands in the three preceding years will be annually collected and processed on its behalf, or 2°. WEEE weighing a minimum of 85% of the average weight of EEE placed by it in the

322. Overview of registered producers in 2014, made available by the Nationaal (W)EEE Register’s official website.

323. Stscr 2014, 2975.

324. Article 14(1), stscr 2014, 2975.

325. Article 14(3), stscr 2014, 2975.

market in the Netherlands in the relevant year will be annually collected and processed.³²⁶

Articles 15, 16, and 19 refer to Information for users, Information for treatment facilities and Registration, information and reporting (for the *Stichting Nationaal (W)EEE Register*) respectively.

6.3.2 Distributor and retailer responsibilities

Articles 4 and 5 of the transposition bring, respectively, obligations concerning the duty for distributors in a broad sense to take-back upon making new products available and for retailers with sales areas for EEE larger than 400 square meters to ensure take-back from its distributor. There is a different focus given by the Dutch law to the retail shops operators once compared with the Directive. While at the original text both Article 5(2)(b) and Article 5(2)(c) direct the responsibility for the distributor to ensure take-back free of charge on a one-to-one basis, as well at retail shops of at least 400 square meters of sales area for EEE, the Dutch Regulation on WEEE includes a responsibility for the retail shops operators themselves. The retail operator must ensure that his distributor will provide for the collection of very small WEEE at the shop, or in its immediate proximity. The obligation will not apply if a publicly assessment made available proves the existence of alternative collection schemes at least as effective. Still on Article 4, the distributor is designated with the obligation to make the information about the take-back available in a clear and visible manner, before the purchase and payment of the new equipment.

A point to be highlighted is that, along with the other Member States, the Netherlands implemented the Waste Shipment Regulation into national law. Its guidelines³²⁷ were agreed upon common understanding of all MS and include the distinction between EEE and WEEE which, transposed into Dutch legislation, leads to the understanding that retailers are prohibited from selling or exporting used/returned EEE without testing them first, once untested products are classified as waste.

6.4 Particularities of the Dutch implementation of the Directives

Although the Dutch transpositions of the WEEE Directives are considered a reproduction of the text of the Directives themselves, there are a few differences to be highlighted. The major one relates to an intensively debated as-

326. Article 10, stscr 2014, 2975.

327. Correspondents' guidelines represent the common understanding of all Member States on how Regulation (EC) No 1013/2006 on shipments of waste. The 1013/2006 was transplanted into the Dutch legislation on 04/07/2007 sterc 2007, 130.

pect of the WEEE management ever since the first Directive on this waste stream: the use of visible fees. In the Dutch system, the processing of WEEE was legally allowed to be financed by a visible disposal contribution paid by the consumer – at the moment of the purchase of some new EEE – since January 1999 when it was launched in connection with the now repealed Decree for the Disposal of White and Brown Goods. During the period when the fees were applied, they were partially used for the costs of collection and recycling, and partially for the establishment of a cash buffer for processing the historic stock that was already present upon implementation of the scheme and expected to be processed.

With the come into force of the WEEE Directive 2002/96/EC, the removal of the fees from the national system was included at the transposition to the Dutch regulations. As a result, the REA brought in its Article 11:

(6) When new products are sold, the cost of the waste management referred to in subsection 1 [household WEEE put on the market after 13 August 2005] shall not be made known to buyers as a separate item.

(7) When new products are sold, the waste management costs referred to in subsection 2 [household WEEE put on the market before 13 August 2005] may be made known to buyers as a separate item, provided the disclosed figure does not exceed the actual cost.

(8) The provisions of subsection 7 apply until 13 February 2013 in relation to electrical and electronic equipment falling under category 1 of Annex IA to Directive No 2002/96, and until 13 February 2011 in relation to electrical and electronic equipment falling under categories 2 through 10 of the same Annex.³²⁸

Therefore, according to the new legislation at the time, from 14 February 2011 the contribution could no longer be applied on most of EEE, except for large white goods, and it was finally eliminated on 14 February 2013. A few years later, however, the Recast WEEE Directive was published and despite the fact that the revision of the WEEE Directive included the possibility for visible fees, and that it was of some of stakeholders' opinion (producers and treatment operators) that the visible disposal fee was a favourable strategy, the Dutch Government maintained the decision to no longer allow for its application in the Netherlands. The decision resulted in a transposition of the Recast WEEE Directive which did not include the return of the disposal fees. The government's position reflected the political pressure originated from a motion³²⁹ from Poppe, Vietsch and Neppérus – parliamentarians in the House of Representatives the main chamber of the Dutch parliament. The document

328. REA §5 Finance, article 11(6)(7)(8).

329. RJL Poppe, CA Vietsch, H Neppérus. De Tweede Kamer. 30 872 Landelijk afvalbeheerplan Nr.60 Gewijzigde motie van het lid Poppe c.s. ter vervanging van die gedrukt onder nr. 58 (kst 30872 – 60)

presented reasons for an immediate removal of the visible disposal fee, and if was unanimously adopted at the plenary debate on April 13, 2010. The motion argued that the fee had been extensively collected from consumers, in the purchase of white and from goods, since 1999. Also highlighted the fact that, according to the WEEE Directive, the fee had the purpose of covering the costs of collection and recycling of historical waste, which meant EEE put on the market before 13 August 2005. Even further, it mentioned the positive values noted from raw materials recovered in the year used for analysis (2008).

Finally, given the reserves at the time and the annual yield of positive value, the motion urged the government to negotiate with the producers organisations and NVMP to set a provision for the fee to be ‘immediately reach zero’. At the same time, it must be noted that the new Dutch law on WEEE Management has not included any prohibition either. Some actors interpret this silence as a possibility for future changes. The specificity of the Dutch strategy for the use of a visible removal fee as a financing tool was the fact that the fee was not put on each and every product (or product category). The aim was to prevent retailers from becoming overloaded with a large variety of different fees. Hence, the decision made in agreement with all participants (manufacturers, importers and retailers) chose for specific products to have the fee. The sales numbers in combination with a certain fee value would prove to be enough to provide adequate income for financing the waste management of all products in a sector.

The NVMP also supported³³⁰ for the return of the visible disposal contribution. The position paper declared that it represents the most transparent and cost-effective manner for the financing the processing of e-waste. It added that the consumer awareness towards the need for responsible processing of end-of-life WEEE is a significant consequence of a visible disposal contribution. The visible take-back fee also provided for the ‘historic visible fee WEEE reserves’, which are funds collected using the visible take-back fee, during the period from 2000 to 2013.

Another point of interest observed at the legal provisions for treatment of e-waste in the Netherlands is the role attributed to municipalities for collection of household waste, including the electrical and electronic equipment waste stream. Looking back on Article 6 of the Disposal of White and Brown Goods Decree the municipalities were given a 7-months-deadline to implement a separate collection of categories³³¹ 1, 4, 7, 8, 9 and 10 of WEEE orig-

330. NVMP, ‘Position Paper Disposal Fee’ (2012) <www.nvmp.nl/producer-responsibility> accessed 15 July 2015.

331. According to Annex 1 of the Decree (stb 1998, 238) the categories were: 1. Refrigerators and freezers; 2. Heating equipment; 3. Water heaters; 4. Washing machines and dryers; 5. Equipment for cooking, baking or roasting; 6. Sound equipment; 7. Image receiving equipment; 8. Computers; 9. Paper printing equipment; 10. Telecommunications equipment; 11. Electrical and electronic charging equipment; 12. Electrical and electronic kitch-

inated from private households, and to establish and maintain a location where such products could be disposed of. Each of the 12 provinces in the country, by means of their own Provincial Environmental Ordinance³³² were already aware of the need to implement separate collection of the categories to be defined by the Decree. On the regulations that followed, the legal responsibility was maintained. Article 3(1) of REA reinforced ‘that municipal authorities shall bear responsibility for the separate collection of waste electrical and electronic equipment’.³³³ Article 3(2) not only stressed the obligation for every municipal authority to ensure that ‘sufficient opportunity is provided for final holders’ but also the figure of the ‘distributor’ as a final holder of private household WEEE. More recently, in the Regulation on Waste Electrical and Electronic Equipment³³⁴ – the transposition of the Recast WEEE Directive into national legislation – the same text from REA is repeated on Article 3.

Lastly, the attention of the Dutch government towards ‘treatment of WEEE’ must be highlighted. When the Regulation on Waste came into force in February 2014 its Article 20 was dedicated to stipulate that all treatment operators for WEEE should report to the national register the treated amounts of WEEE. On the same topic, Article 11 included the provisions from the Recast Directive and set the date of 1 July 2015 for proper treatment of WEEE be performed in accordance with WEEELABEX Treatment standards. By this provision, it is meant that treatment of WEEE will be authorised only to waste treatment operators certified in accordance with WEEELABEX Treatment under the explanation that ‘the certification according to the standards of WEEELABEX Treatment provides workflows that make it transparent and guaranteed.’³³⁵ According to the representative of the recyclers, this arrangement contributes to a more stable market and a structurally sound industry.³³⁶ The deadline set for treatment operators to meet with the standards of the WEEELABEX Treatment was of 1 July 2015, as of Article 11(d).

en appliances; 13. Electrical and electronic tools; 14. Other electrical and electronic household appliances.

332. ‘Provinciale Milieuvorgingen’, one for each province. Provided by Article 1.2 of the Environmental Management Act (*Wet Milieubeheer*) which defines the obligation of the provincial council to adopt an ordinance for the protection of the environment.

333. The Netherlands, WEEE Management Regulations (Regeling beheer elektrische en elektronische apparatuur), stcr 2004, 142.

334. Regeling afgedankte elektrische en elektronische apparatuur, stscr 2014, 2975.

335. Explanatory notes, article 20, stscr 2014, 2975.

336. Norbert Zomeveld (Director-Secretaris of the European Electronics Recyclers Association - EERA) in interview ‘Laat vooral de markt het werk doen’, RETOUR over inzameling en recycling van e-waste, Zomer 2014.

6.5 Reported Problems

In 2004 an investigation was launched by VROM Inspectorate, as a response to a series of reports on the lack of structural compliance with the WEEE regulations and illegal exports of waste electrical and electronic equipment. The investigation identified several offences committed in the waste electrical and electronic equipment chain. 'Large quantities of waste equipment were circumventing the take-back system set by producers and importers and were landing up in the illegal circuit'.³³⁷ The findings motivated the Inspectorate to set WEEE as a priority waste stream for 2005 and 2006. Moreover, the main goals for the new priority waste stream were defined to be the increase of the structural compliance level to 90% by the end of 2006, and the extinction of illegal exports of waste electrical and electronic equipment to non-OECD countries from or via the Netherlands. By the end of the period, the results were compared (2004 to 2006) and an evident drop of contraventions could be noted at the percentage. While more than 60% of retailers were identified as contravening the rules in 2004, there were only 11% in 2006. The example of the increase by more than 50% of televisions collected, or the decrease from 40% in 2005 to 28% in 2006 of businesses infringing the rules are some of the other data revealed by 'The clearer picture' investigation. The enforcement actions undertaken were evaluated as bringing a significant improvement to the level of compliance in the waste electrical and electronic equipment chain.

6.6 Complementary Policies and Actions

6.6.1 Implementation and Enforcement

As explained by Squintani,³³⁸ the Waste Directive of 1975 had required in its Article 3 that MS took appropriate steps to encourage the prevention, recycling and processing of waste. Nevertheless, in spite of the good intentions of the Dutch legislator the prevention of waste remained a problem.³³⁹ Chapter 5 of the Waste Act, which had been passed in 1977 to bring the provisions of the Directive 75/442/EEC into action, remained mostly unapplied until

337. Dutch Inspectorate of the Ministry of Housing, Spatial Planning and the Environment (VROM), 'The clearer picture, enforcement action in 2006 on exports of waste electrical and electronic equipment' (8 March 2007) 3
<<https://www.rijksoverheid.nl/documenten/rapporten/2007/07/01/the-clearer-picture>> accessed 5 July 2015.

338. Lorenzo Squintani, 'Gold-plating of European Environmental Law' (Doctoral dissertation University of Groningen 2013) 119-121.

339. GH Addink, 'Biedt het wetvoorstel afvalstoffen adequate oplossingen voor de belangrijkste knelpunten van het Nederlandse afvalstoffenbeleid?' in Jans and Van Acht (eds.) *Afvalstoffenrecht* (Tjeenk Willink 1991) 11-26.

1991.³⁴⁰ One of the reasons impeding the application of Chapter 5 was the fear of affecting the functioning of the European internal market.³⁴¹ In 1988, a notice on the prevention and reuse of waste underlined a 5% waste prevention target, which was further increased to 10%, in 1990.³⁴² This was a clear reaction of the Dutch government aiming for improvement of the situation. At the same time, more attention was needed on recovery of waste. This issue was addressed – as it was the prevention of waste – by the establishment of the Environmental Management Act (EMA).³⁴³

It is worth noting from this context Squintani's position towards the choice made by the Dutch legislators. According to him, the Dutch law did not simply promote recycling by means of a campaign or studies, but it adopted an extended legal framework targeting at many actors. He concludes that the Dutch approach did not keep burdens to a minimum. The measures taken were further in the actions and provisions than the old WFD itself. The reasons leading for such 'gold plating' decisions were identified as seemingly flowing from the need for the Dutch law to have a uniform system and to avoid leaving large amounts of waste unregulated.

More specifically in the electric and electronic equipment waste stream, to provide for a proper enforcement of the decrees, the Government can rely on legal provision existing since before the Disposal of White and Brown Goods Decree. Under administrative enforcement, reference is made on Chapter 18 of the Environmental Management Act³⁴⁴ and allow for the use of instruments specified the General Administrative Law Act (GALA).³⁴⁵ More specifically, GALA Chapter 5 (enforcement), on the provisions about reparation sanctions, includes instruments such as 'administrative enforcement orders' (Division 5.3.1.), and 'financial penalty' (Division 5.3.2). At the same time, in accordance with the Economic Offences Act,³⁴⁶ violations of the Regulations on Waste Electrical and Electronic Equipment³⁴⁷ are punishable through a criminal procedure. For instance, financial penalties can be imposed based on the Economic Offences Act. Enforcement, therefore, may

340. EN Neuberburg and P Verfaillie, *Schets van het Nederlands milieurecht* (Vuga 1991) 353.

341. *ibidem*.

342. TK 1988/89, 20 877, nr. 2 (page 19) and TK 1991/92, 21 246, nr. 5 (page 51).

343. Dutch Environmental Management Act, Bulletin of Acts and Decrees 2002 No 239.

344. The Environmental Management Act or *Wet milieubeheer* – Wm resulted from the parliamentary proposal for an improved and enhanced law to nationally integrate the environmental protection regulations (kamerstuk 2, 1989-1990, 21137, nr. 22, p. 30). The Act was mostly based on the *Wet algemene bepalingen milieu-hygiëne* – WABM (stb. 1979, 442), and was introduced on 1 March, 1993 (Stb. 1992, 551). Read further FCMA Michiels, *De Wet milieubeheer* (Kluwer 2003).

345. In Dutch, *Algemene wet bestuursrecht*.

346. *Wet op de economische delicten*. The Economic Offences Act (WED) of 22 June 1950 is a framework law, which contains a diverse list of economic crimes and offenses, including violations of environmental laws.

347. The Netherlands, *Regeling Afgedankte Elektrische en Elektronische Apparatuur*, stscr. 2014, 2975.

take place under both administrative law and criminal law, a possibility which has been ensured by all regulations concerning WEEE since 1998. In this sense, it is also established – on the grounds of section 18.2 b(1) of the Environmental Management Act – that the duty to supervise the compliance with this regulations as well as to ensure their enforcement under administrative law are responsibilities of the Ministry of Infrastructure and the Environment³⁴⁸ (IenM). The implementation of the Regulations (administration) has been delegated to the Human Environment and Transport Inspectorate (ILT),³⁴⁹ and the Public Prosecution Department, has the duty for enforcement under criminal law (criminal prosecutions).

Although the ILT has developed a rather successful strategy for preventing illegal shipments of WEEE – commonly disguised under the label of second hand EEE sent mainly to African countries – a full control over the internal Dutch WEEE flows is yet to be achieved. For the illegal exports, in a response to the 2004 report, the Dutch Inspectorate adopted a ‘supply-chain enforcement approach’ to the problem of illegal exports of WEEE. The approach aimed at preventing illegal export by starting at the source, which meant extending the enforcement along the e-waste supply chain from exporter back to wholesaler and retail chain that disposed of the e-waste. Under the approach, improving the engagement with enforcement authorities at the port of reception was, therefore, absolutely necessary.³⁵⁰ However, in the national market there is an unknown number of producers which are not registered in any collective scheme or nor at the national register (‘free riders’), recyclers do not feel compelled to follow the standards and, naturally, a concrete number for the flows of (W)EEE cannot be given. The fees and penalties for those not following the national WEEE management legislation has no great impact on the offenders, the same way sanctions and warning letters stand as low penalties that are likely to become ‘an incentive for the crimes to more lenient ports than to deter exporters from violations’.³⁵¹

348. During the rule of the Decision for the Disposal of White and Brown goods, there was only the role of the Inspectorate of Health for the implementation, and the Public Prosecution Service (Openbaar Ministerie), for criminal prosecution.

349. In Dutch, *Inspectie Leefomgeving en Transport* (formerly named as VROM-inspectorate). During the implementation of the first WEEE Directive, it was a responsibility of the VROM Inspectorate; even before, during the Decision for the Disposal of White and Brown goods, the Inspectorate of Health (Inspectie van Volksgezondheid).

350. Dutch Inspectorate of the Ministry of Housing, Spatial Planning and the Environment (VROM), ‘Definitief Nazorgactie elektronica afval 2008’ (18 November 2009) <<https://www.tweedekamer.nl/zoeken>> accessed 5 May 2015.

351. Judith van Erp and Wim Huisman, ‘Smart regulation and enforcement of illegal disposal of electronic waste’ (2010) 9(3) *Criminology & Public Policy* 579-590, 582.

6.6.2 Waste management Plan

The National Waste Management Plan³⁵² 2009-2021 (LAP-2) contains a sector plan for WEEE (TK 2009-2010, 30872, No 49, as amended by Government Gazette 2010, 2730, Section 71). The sector plan defines the minimum standard for treatment of WEEE and the specific details of the rules for the import and export of this type of waste. The minimum standards for the treatment and processing of WEEE, the reuse of parts, and recycling are defined at the core of LAP-2. For parts, materials, substances, or components resulting from disassembly which cannot be reused as a component or material, the minimum standard as a form of recovery is incineration. For fractions that cannot be recovered, the minimum standard is incineration as a form of disposal. These fractions may be landfilled if incineration is not possible. LAP-2 is clearly based on the recast WEEE when observed that producer responsibility was explicitly extended to the front door of the consumer by making manufacturers and importers responsible for all collection and processing costs (including the ones incurred by municipalities in the environmental field). Concerning recovery targets, the plan explicitly requires the observation to the WEEE Directive: the ‘treatment of waste electrical and electronic equipment must meet the stipulated in Article 11³⁵³ of the Regulation of waste electrical and electronic equipment.’³⁵⁴

6.6.3 Waste to Resource Programme

The current ambition of the Ministry of Infrastructure and Environment is the ‘Waste to Resource Program’, announced in the Green Growth letter sent to the House of Representatives on 28 March 2013.³⁵⁵ The program seeks for a transition to a circular economy, and focuses on promoting perspectives for action as well as for improving separate collection, among others. The program also aims at identifying and eliminating unnecessary obstacles in legislation preventing optimal recycling of materials from waste streams, such as the obstacles entrepreneurs face in making their production processes circular and reusing residual streams of waste. The intention made clear by the annex

352. Landelijk Afvalbeheer Plan 2.

353. Article 11 defines minimum targets for recovery, according to Annex V, encouragement for new recovery, recycling and treatment technologies to be developed, records of weight of WEEE, among others.

354. De verwerking van afgedankte elektrische en elektronische apparatuur moet voldoen aan het gestelde in artikel 11 van de Regeling afgedankte elektrische en elektronische apparatuur. Landelijk afvalbeheerplan 2009 – 2021 (LAP). Sector 71, p. 167 (03/12/14 version) <www.lap2.nl/> accessed 5 May 2015.

355. Groene economische groei in Nederland (Green Deal), Tweede Kamer der Staten-Generaal. Vergaderjaar 2012-2013. Kamerstuk 33043 nr. 14. Gepubliceerd op 2 mei 2013.

to the letter sent to the House of Representatives³⁵⁶ was for a more concisely defined public framework for sustainable waste management. Such task should be developed together with the municipalities. The framework should become a basic principle for medium and long-term policy aiming at the reduction of the amount of residual waste in the country. Certainly that industry – waste processing and recycling – are expected to be involved in such effort so that an improved separate collection can lead to more recycling and lower costs for the public. The ‘Waste to Resource Program’ was declared to especially seek to strengthen contacts between municipalities and facilitate situations where municipalities are better able to learn from each other.

6.7 Conclusions

Intensive monitoring, as well as studies seeking to fully identify the WEEE flows – with special focus on exports of WEEE and consumer’s behaviour – were observed as key elements to one the most successful models of the European Union. However, recent changes in the Dutch System for WEEE still sees room for improvement. The removal of the visible fees, the authorisation of a competing collection scheme for household WEEE and the setup of a national register that requires not only for producers but also for treatment operators³⁵⁷ to register are considerable changes made to the system in the past few years as an attempt to achieve better rates.

The removal of the fee was predicted by the provisions resulting from the national transplant of the WEEE Directive 2002/96/EC and was maintained with the transposition of the Recast Directive, even though the possibility for its return was made available by the new Directive. The decision was a result of pressure from parliament, mainly seeking to reduce the burden from the final user. Other relevant reasons were the fact that a visible fee tends to limit competition advantages among producers, to cause costs to retailers (since each collective scheme defines its own fees retailers have to deal with several different fees to apply differently to similar products), and to slow down or even hold back innovation by recyclers as well as producers.

The first competing scheme (WEEE NL) to the pre-existing B2C scheme in the Netherlands (Weecycle) is nearly as recent as the Recast of the WEEE Directive. Although the change is too recent to be declared successful or not, it is expected that competition will lead to innovation. The national register

356. Dutch Parliament, ‘Waste to resource: Elaboration of eight operational objectives’ (Letter to the house of Representatives, 28 January 2014)
<<https://www.government.nl/documents/parliamentary-documents/2014/01/28/implementation-of-the-waste-to-resource-programme>> accessed 15 July 2015.

357. As defined by the National (W)EEE Register, ‘treatment operator’ stands for a company that either converts or processes discarded electrical appliances and low-energy light bulbs (WEEE) in the Netherlands or exports them to be processed abroad.

has been observed as an instrument of greater investment and a strategic tool to increase the mapping of the WEEE flows. Those are essential measures in order to acquire clearer data concerning the actual amount of WEEE in the Dutch territory, for calculating the collection and recycling targets in a more accurate approach. The national register, therefore, receives the registration of products put on market and of products recycled by any WEEE recycler in the Netherlands, including those acting on the ‘free’ market.

There were two very different approaches by the Dutch government when it comes to regulating the national e-waste take-back system. In 1996, when a frustrated attempt to have industry (and other stakeholders) organising itself and presenting its proposals for regulations, the Dutch government opted for a top down approach by establishing the rules and roles from all actors involved in the WEEE Management System. Back then, although there was an attempt for a voluntary agreement with all the stakeholders – representatives of producers and importers, the government, the processing industry, retailers and environmental organisations, the process was unfruitful.³⁵⁸ Determined to achieve a more integral environmental policy, a top down approach for regulating the matter was adopted by the Dutch government in the sequence. Some criticism³⁵⁹ has been presented on the definition of the role of the processing industry, which already had an ongoing system for treating discarded EEE. In a second moment, the new regulations established by the process of legally transposing the Recast WEEE Directive have been recognised as a bottom up approach, as a result from involving recyclers, beyond producers/importers at the negotiations and drafting of the new laws.

358. Bressers, Immerzeel and Ligteringen (n 308)218-219.

359. For instance, Norbert Zomeveld (Director-Secretaris of the European Electronics Recyclers Association - EERA) in interview ‘Laat vooral de markt het werk doen’, RETOUR over inzameling en recycling van e-waste, Zomer 2014.

The French Transposition and Implementation of the WEEE Directives

7.1 Introduction

The French implementation of the ROHS and WEEE Directives combined both directives and transposed their provisions into French law by the Decree of 20 July 2005. The process was accomplished after several months of consultation with stakeholders and 9 successive versions. The Decree was complemented by the Ordinances and Orders responsible for modifying and expanding the French Environmental Code.³⁶⁰ The Ordinances and Orders came to clarify the Decree on the conditions for treatment of WEEE, approval procedures professional eco-organisations, licensing arrangements household eco-organisations and approval of individual systems set up by producers, the registration process for the register of producers, exceptions to the ban on using certain hazardous substances in EEE, among others.

The system for collection and treatment of electrical and electronic equipment from households became operational in France on 15 November 2006. Even though the WEEE Directive has been largely based on the principle of extended producer responsibility for setting the structure of the WEEE take-back systems, the use of this principle in practice had already been a part of French legal rules structuring other take-back systems originated from national initiative: in 1992, the French authorities had decided to apply the EPR model to tackle household packaging waste.³⁶¹

The WEEE system created in France fully adopted the strict responsibilities for the producers in respect to the elimination process. The structure which was established allowed for the WEEE generated either by private households or businesses and the public sector (when WEEE similar to

360. France, Code de l'environnement, Partie réglementaire. Livre V: Prévention des pollutions, des risques et des nuisances. Titre IV: Déchets. Chapitre III: Dispositions propres à certaines catégories de produits et de déchets (R). Section 10: Equipement électriques et électroniques.

361. French Ministry of the Environment, Energy and the Sea, '20 years of EPR in France: achievements, lessons learned and challenges ahead' (OECD Global Forum on Environment: Promoting Sustainable Materials Management through Extended Producer Responsibility, Tokyo, 17 – 19 June 2014) 1
<[https://www.oecd.org/environment/waste/France%20\(final\).pdf](https://www.oecd.org/environment/waste/France%20(final).pdf)> accessed 29 March 2016.

household WEEE) to be discarded at local waste collection centres, retailers collection points, or to be given to social enterprises (used WEEE) for preparation for reuse. All WEEE collection and recycling service providers must be chosen by the producers compliance schemes by means of calls for tenders in an attempt to motivate competition and, at the same time, stimulate mutual monitoring.

Following the provisions implemented from Directive 2002/96/EC (WEEE), the French government approved four compliance schemes to operate and collect the '*éco-contribution*' under the responsibility of processing the end-of-life EEE put on the market. The system adopted the visible fee, '*éco-contribution*', which has been attributed to all electric or electronic equipment put on the market since 2005. The fee is basically a translation of the costs that the producer pays to the eco-organisations for the management of the WEEE originating from their own end-of-life EEE. As it will be discussed later on this chapter, the fee is charged in addition to the product price and shown separately on the label. It is paid by the consumers and transferred to the producers by the distributors, financing the producers compliance schemes for the processing of WEEE.

The French clearing house, OCAD3E, was created by the compliance schemes and sets the recognized producer compliance schemes in contact with local authorities, besides guarantying collection of WEEE. The clearing house is responsible for monitoring the functioning of the French WEEE system as it pays a financial compensation for the separate collection performed by the logistics companies hired to make the take-back possible. The OCAD3E relates to nearly 4,000 municipal waste collection centres, reported as active in 2012. The figures represent coverage between 61 and 62 million citizens and representing 68% of flows of WEEE collected by compliance schemes in 2012.³⁶²

A strong feature of the French EPR system in general is to use social economy to catalyse waste management operations. Several French EPR schemes have historically involved stakeholders from social economy networks, including charities or social economy companies. This has also been the case for repairing and reuse of WEEE. The producer collection schemes develop strategies in collaboration with the municipalities and reuse organisations in order to enable the actual second-life of appliances that are deposited at municipal locations. Both French national networks Emmaüs (*réemploi*) and Envie (*réutilisation*) represent thousands of jobs and a significant volume in reused appliances at a time when the matter of waste prevention is

362. BIO Intelligence Service, 'Projet de quantification des déchets d'équipements électriques et électroniques (DEEE) en France: Gisement et destination des DEEE ménagers et assimilés' Étude réalisée pour le compte de l'ADEME et OCAD3E (December 2013) 19 <www.ademe.fr/projet-quantification-dechets-dequipements-electriques-electroniques-deee-france> accessed 2 May 2015.

one of EU's priority policies.³⁶³ Committing to a social and solidarity economy (*l'économie sociale et solidaire – ESS*) is part of the strategic actions performed by producer compliance schemes towards reuse.³⁶⁴ The structure for reuse of WEEE, among other products, is part of a developed and prosperous policy in France, the social and solidarity economy, which has become highly relevant for the EU's Europe 2020 strategy.

The WEEE recast Directive came along in 2012 and defined new targets and strategies for WEEE regulations in the European MS. It was included in the French legislation partially by Decree 2014-928³⁶⁵ of August 2014, and complemented by a set of ministerial orders – which have altered the Environmental Code once again – as well as a notice to producers. The notice included new provisions concerning producers' obligations towards the management of WEEE.

7.2 The WEEE Directive 2002/96/EC

7.2.1 The Process

As in all Member States of the European Union, national French laws have also been responsible for the transposition of the provisions brought by the European Directives. The procedure was no different for the WEEE and RoHS Directives, both from 2002. Despite the focus of this study on WEEE, the two Directives are mentioned here due to their common implementation processes. Even though they came to regulate inter-connected topics, a majority of MS chose to implement them by means of separated legal instruments. France, on the contrary, chose for a conjoint legislation for the Directives in question. The decision was made having as its legal basis Article L. 214-1,³⁶⁶ of the Consumer Code, and Article L. 541-10³⁶⁷ of the Environmen-

363. The revised Waste Framework Directive required that Member States had established, by 12 December 2013, national waste prevention programs.

364. For instance, support from Eco-systèmes, the producer compliance scheme with the greatest share of WEEE responsibility. Éco-systèmes, DEEE Votre contribution Développement Durable, SMET 55 (Edition Collectivités Territoriales 2014) 9. 'Depuis le démarrage de la filière, 'Eco-systèmes' développe son soutien à l'ESS en favorisant sa professionnalisation et en lui donnant des moyens pour diversifier son activité. Also 'Eco-systèmes' participe à des travaux communs avec le GIFAM, le SIMAVELEC, l'ADEME et les acteurs de la réutilisation des pièces détachées, pour en proposer d'occasion ou neuves via ses partenaires de l'économie sociale et solidaire. Enfin, dans le cadre des travaux avec le CENELEC, Eco-systèmes s'investit fortement dans la définition des nouveaux standards européens sur le réemploi et la réutilisation, pour en garantir la qualité et la pérennité au niveau international.'

365. French Ministry of the Environment, Energy and the Sea, Décret 2014-928 du 19 août 2014 relatif aux déchets d'équipement électriques et électroniques et aux équipements électriques et électroniques usagés. Journal Officiel de la République Française 22 août 2014.

366. Regarding articles 4, 5, and 6 of the draft proposal of a government decree for the prevention and management of WEEE (provisions pertaining to market access for EEE). Code de la consommation (Livre II Conformité et sécurité des produits et des services), Article L.

tal Code (EC). This last Article provides that the production of waste-generating products can be regulated and that producers of such products can be obliged to provide or contribute to the elimination of waste derived from them.

After an extensive process of consultation with all stakeholders involved, Directive 2002/96/EC (WEEE) and Directive 2002/95/EC (RoHS) were transposed into French law mainly by the Decree 2005-829³⁶⁸ of 20-07-2005 entitled ‘on the composition of electrical and electronic equipment and the elimination of waste from this equipment’. Along that same year, the transposition was completed by the addition of the following regulations to the Decree: the Order of 23/11/2005 on the agreement predicted in article 19 of Decree 2005-829, the Order of 23/11/2005 relating to electrical and electronic equipment waste treatment procedures laid down in Article 21 of Decree 2005-829, the Order of 06/12/2005 on agreements and approvals provided under Articles 9,10,14 and 15 of Decree 2005-829, Decree 2005-1472 of 29/11/2005 amending Decree 96-1008 of 18/11/1996 on plans disposal of household and similar waste, law 2005-1720 of 30/12/2005 for supplementary budget for 2005, and the Order of 13 March 2006 on the registration process and the information contained in the national register of producers provided for in article 23 of Decree 2005-829.³⁶⁹

With the coming into force of the Decree, the organisation of the electrical and electronic equipment waste stream was regulated by article L. 541-10-2 and articles R. 543-172 to R. 543-206 of the national Environment Code. A translation of article L. 541-10-2 which sets the guidelines for the French WEEE system says:

Under the first paragraph of II of Article L. 541-10, any producer, importer or distributor of electrical and electronic equipment is required to provide or contribute to the prevention and management of waste from such products (§1). Separate collection costs of household waste electrical and electronic equipment supported by local authorities are offset by an authorised coordinator organism which transmits their equivalent fraction of the financial contribution received from the persons mentioned in the first paragraph (§2). The treatment

214-1. ‘3° La définition, la composition et la dénomination des marchandises de toute nature, les traitements licites dont elles peuvent être l’objet, les caractéristiques qui les rendent impropres à la consommation’ <<https://www.legifrance.gouv.fr>> accessed 30 March 2016.

367. France, Code de l’environnement, Article L. 541-10 <<https://www.legifrance.gouv.fr>> accessed 30 March 2016. I.-La fabrication, la détention en vue de la vente, la mise en vente, la vente et la mise à la disposition de l’utilisateur, sous quelque forme que ce soit, de produits générateurs de déchets peuvent être réglementées en vue de faciliter la gestion des déchets ou, en cas de nécessité, interdites.

368. French Ministry of the Environment, Energy and the Sea, Décret 2005-829 du 20 juillet 2005 relatif à composition des équipements électriques et à l’élimination des déchets issus de ces équipements. Journal Officiel de la République Française 22 juillet 2005.

369. See more at the French Environmental Code, articles L. 541-10-2 and R. 543-172 to R. 543-206.

of household waste electrical and electronic equipment from separate collection and free take-back offered by distributors of used electrical and electronic equipment from users is assured by systems which the persons mentioned in the first paragraph financially contribute, in a proportionate manner, and who are endorsed or approved by joint orders from the ministers for the economy, industry, ecology and local authorities (§3). Until 1 January 2020, any person who manufactures, imports or introduces in the national market, in a professional level, electrical and electronic equipment households along with their successive buyers, discloses to the end user, on the sales invoices of new household electrical equipment and electronics, in addition to the unit price of the product, the unit cost for the management of separately collected waste electrical and electronic equipment from household put on the market before 13 August 2005 (§4). This unit cost is strictly equal to the cost of managing such waste. It cannot be subject to reduction. Distributors transmit this cost unaltered to the end consumer. The latter is informed of this at the point of sale or, in case of distance selling, by any suitable method (§5). Electrical and electronic equipment which, until 31 December 2013, were considered professional and due to regulatory change are considered household electrical and electronic equipment are subject to the fourth and fifth paragraphs of this article from 1 January 2015 (§6). A decree from the Council of State specifies the conditions for application of this article and the penalties for violations (§7).

Additionally, the dynamics between the major players involved – compliance schemes and municipalities – must be mentioned. Early in 2005 discussions between compliance systems and the ‘Mayors of France Association’³⁷⁰ seeking for an agreement on financial support for municipalities for collection of WEEE. In March 2005 it was reported that municipalities had initially demanded 750 euro per tonne collected. Nonetheless, in July 2006, the Mayors of France Association announced that they had come to an agreement with producers who would compensate municipalities up to 20 million euro per year. The amount was based on an estimate of 123,000 tonnes collected by municipalities (population of 62,886,117 in 2006 and approximately 2 kg/capita/year), meaning an average of 150 euro per tonne.³⁷¹

7.2.2 Actors and roles in EEE’s life cycle, according to WEEE Regulations

The Decrees and Orders created a setup of two distinct e-waste management sectors: one concerning devices used in the private context (household sector)

370. In French, Association des Maires de France.

371. European Commission, ‘The Producer Responsibility Principle of the WEEE Directive’ DG Environment Final Report (Ökopol, IIIIE and RPA 2007) 30.

and the other for industrial electrical and electronic devices (professional sector). Observing the producer responsibility brought to the (W)EEE sector in France, two different starting dates must be observed: 13 August 2005 (for professional WEEE) – as a consequence of the publication of the Decree 2005-829 on 22 July 2005 which transposed most provisions from the WEEE Directive and was responsible for providing a startup to the national system for collection and treatment of WEEE. The other starting date refers to household WEEE: 15 November 2006, date chosen by the French government to officially launch the collection process of the Waste Electrical and Electronic Equipment (WEEE).

Since the national transposition of the WEEE Directive into the French legal system the visible fee has been used on every EEE put on the market from 15 August 2005 onwards. Also called ‘eco-cost’, the fee has always been compulsory, included on the sale price of Electrical Electronic Equipment, and a representation of the price for the treatment of an end-of-life EEE.

French legislation leaves room for producers to establish more collective Producer Responsibility Organisation (PRO) or ‘*éco-organismes*’, if they find necessary, or to choose for the individual option. In practice, most producers decide to act collectively in one single collective PRO, turning individual compliance schemes a rare case in take-back systems in general exception. The WEEE scheme setup in France as a response to the WEEE Directive of 2002 presents a plurality of four collective producer compliance schemes.³⁷² Those were authorised by the Government as the Ministerial Orders³⁷³ of 9 August 2006 and operate in free competition for collecting, transporting and treating WEEE.

The eco-organisms are all non-profit bodies, performing under the supervision of a coordinating centre, and in order to continue their activities, must individually renew their authorisation every few years. The compliance schemes in France are Eco-systems (70% market share), Ecologic (20%), ERP (10%) and Recylum (100% of lamps and lighting equipment). In each territory, those compliance schemes select providers of logistics service (for the collection of WEEE at distributors and points of waste collection centres) as well of processing operations (disassembling/ decontamination), which are adapted to each ‘family of WEEE’. The ‘families of WEEE’ were established in France according to the following distribution: Big appliances (cold), big appliances (cold excluded), screens, and small appliances in general.

372. In this chapter, producer compliance schemes – synonym for take-back (compliance) schemes – due to the French expression *éco-organismes* will also be referred to as ‘eco-organisms.’

373. France, Arrêté du 9 août 2006 portant agrément d'un organisme ayant pour objet d'enlever et de traiter les déchets d'équipements électriques et électroniques en application de l'article 14 du décret n° 2005-829 du 20 juillet 2005 (JO du 12 août 2006) (Réylum), (ERP), (Eco-Systèmes), (Ecologic).

The four existing compliance schemes established an official eco-organisms coordinator nominated OCAD3E, an acronym for ‘the Unified Coordinating Centre for WEEE Management’.³⁷⁴ Each of the four take-back systems own 25% each of this a non-profit private company. Every 5-year period OCAD3E is accredited by authorities to remain responsible for managing the relationships between the compliance schemes and the communities. Thus, any producer part of a take-back scheme must provide for the collection of WEEE and contribute to the collection by paying a financial contribution to this authorised coordinator organism. Unlike other waste streams, in France, the WEEE sector is fully funded by the producers of EEE through the compliance scheme to which they adhere, or by certified individual systems. Since the first WEEE Directive, France chose for the traditional clearing house model.

Beyond the focus on extended producer responsibility, the WEEE Directive emphasized the selective collection of household WEEE. Hence, the collection system in France was set up around several types of actors in order to successfully achieve the targets. Producers, distributors, and local authorities had their roles included in the French legislation by Articles 8 to 12 of Decree 2005-829.³⁷⁵ The responsibilities for producers and distributors did not diverge from the WEEE Directive, as the distributors’ in-store free take-back followed the ‘one-to-one’ basis (one new EEE for one similar WEEE) and the producers were given the option to join a collective scheme or develop an individual collection system.

Further in the implementation of the provisions from the first WEEE Directive, Decree 2005-829 included the municipalities as playing a part in adopting measures for reducing WEEE not separately collected (art. 8) as well as the necessary actions to inform households users (art. 12). Once municipalities are the ones in charge of the waste management of households, they were given the possibility to offer a separate collection for household WEEE (on a voluntary basis) usually through their waste collection centres. At the same time, the compliance schemes set up by the producers were made responsible for supporting, by agreement with the municipalities, the additional costs those would have for the selective collection of waste electrical and electronic equipment from households. Such measure was included by

374. French Ministry of the Environment, Energy and the Sea, Arrêté du 22 septembre 2006 portant agrément d’un organisme coordonnateur en application de l’article 9 du décret no 2005-829 du 20 juillet 2005. Journal Officiel de la République Française 22 septembre 2006. A common platform of four authorised WEEE compliance schemes, the OCAD3E connects local authorities with WEEE compliance schemes besides supervising the overall WEEE stream.

375. French Ministry of the Environment, Energy and the Sea, Décret 2005-829 du 20 juillet 2005 relatif à la composition des équipements électriques et électroniques et à l’élimination des déchets issus de ces équipements. Journal Officiel de la République Française 22 juillet 2005.

article 87 of the Law 2005-1720³⁷⁶ for the supplementary budget of 2005 which inserted art. L. 541-10-2 in the EC. The new article included in the EC specified for the compensation of local authorities setting up separate collection of WEEE at the one hand and the impact of the terms of the environmental contribution on the other.

The municipalities in France are connected to the WEEE management system by the relationship established with OCAD3E. One of this clearing house central missions is to place contracts with municipalities and to pay the financial support municipalities offer for collection. Since the clearing house was established by the existing take-back WEEE producer schemes, its role also involves equalization of take-back systems operations according to their different market shares (collection obligation tracking) and coordinating general interest surveys and events regarding the WEEE waste stream. Some examples are the WEEE arising survey, the Consumer survey, and the Yearly national WEEE collection day.

Additionally, according to the specifications from the Directive, a register of producers of household and professional EEE was set up in order to identify information concerning the placing on the market, collection and WEEE processed each year, as provided by the decree of 30 June 2009. Kept by the Environment Agency and Energy Management (ADEME), a public operational establishment, the implemented system ensured a better monitoring of adequate treatment of (W)EEE flows, reuse practices, and recycling of metals and plastics. No later than March 1st of each year and always referring to the previous year, producers declare to ADEME the number of units and tonnes of electrical and electronic equipment they have placed on the market, collected for treatment, and treated.

7.3 The Recast WEEE Directive 2012/19/EC

Seeking to bring more effective results to the new targets and procedures, to clarify certain practical modalities of application of the Decree – in particular to identify the equipment within the regulatory scope – the Minister of Ecology published a Notice in November 2014.³⁷⁷ The Notice replaced and repealed the previous one, directed to producers of electrical and electronic equipment, which had been published in the Official Journal of October 26, 2005.³⁷⁸

The current legislation for WEEE in France is based on the European Directive 2012/19/EU, and on the modifications as well as the developments it

376. France, Loi 2005-1720 du 30 décembre 2005 de finances rectificative pour 2005, art. 87. JORF du 31 décembre 2005. Modifié par Loi 2011-525 du 17 mai 2011, art. 183.

377. France, Avis relatif au champ d'application de la filière de responsabilité élargie du producteur des déchets d'équipements électriques et électroniques. JORF du 27 novembre 2014.

378. Avis aux producteurs d'équipements électriques et électroniques. JORF du 26 octobre 2005.

has brought to the first WEEE Directive. The recast Directive was partially transcribed into French law by Decree 2014-928 of 19 August 2014 – after the deadline of 13 February 2014 defined by the Directive – and complemented by five ministerial orders from 8 October 2014³⁷⁹ and a notice to producers of 27 November 2014.

The transposition of the recast Directive into French law, as it has been the case in other jurisdictions, has developed the existing distinction between professional and household WEEE. In French law it is considered household WEEE: WEEE from private households; also WEEE from commercial, industrial, institutional and other sources which, because of their nature and quantity are similar to those households (since 1 January 2015); and WEEE originated from EEE likely to be used both by households and by users other than private households (since 1 January 2015). The Decree on the composition of EEE clarifies that waste from lamps and solar panels are considered household WEEE. This distinction is made without prejudice to Article L. 2224-14³⁸⁰ of the General Code of Local Authorities as it applies only in the context of the implementation of the obligations of the recast WEEE Directive and does not imply that the household WEEE considered as such must be collected by the municipality.³⁸¹

Among the modifications brought by the second WEEE Directive there was one major concern. The increase of the obligation to collect to ambitious rates (2016: 45% of average weight of e-waste put on the market in the last three years, and 2019: 65% of average weight of e-waste put on the market in the last three years or 85% of the e-waste generated, in weight) was perceived as a great challenge by the stakeholders. The topic will be approached further

379. France, Arrêté du 8 octobre 2014 relatif aux conditions de mise en œuvre des obligations de reprise par les distributeurs des EEE usagés, prévu à l'article R. 543-180 du code de l'environnement; Arrêté du 8 octobre 2014 modifiant l'arrêté du 23 novembre 2005 relatif aux modalités de traitement DEEE prévues à l'article 21 du décret n° 2005-829 du 20 juillet 2005 relatif à la composition des EEE et à l'élimination des déchets issus de ces équipements; Arrêté du 8 octobre 2014 relatif aux conditions que doit remplir un mandataire au sens de la section 10 du chapitre III du titre IV du livre V du code de l'environnement afin de pouvoir assurer le respect des obligations qui incombent au producteur lui ayant donné mandat; Arrêté du 8 octobre 2014 modifiant l'arrêté du 30 juin 2009 relatif à la procédure d'enregistrement et de déclaration au registre national pour les EEE prévu à l'article R. 543-202 du code de l'environnement; Arrêté du 8 octobre 2014 modifiant l'arrêté du 13 juillet 2006 pris en application de l'article 2 du décret n° 2005-829 du 20 juillet 2005 relatif à la composition des EEE et à l'élimination des déchets qui en sont issus.

380. Article L2224-14 Modifié par Ordonnance n°2010-1579 du 17 décembre 2010 - art. 24 Les collectivités visées à l'article L. 2224-13 assurent la collecte et le traitement des autres déchets définis par décret, qu'elles peuvent, eu égard à leurs caractéristiques et aux quantités produites, collecter et traiter sans sujétions techniques particulières
<<https://www.legifrance.gouv.fr>> accessed 29 March 2016.

381. Fédération des Industries Electriques, Electroniques et de Communication (FIEEC), 'Guide Pratique FIEEC sur les DEEE II: Vos Nouvelles Obligations' (4 January 2015) 14
<www.fieec.fr/Rapports.aspx> accessed 3 June 2015.

in this chapter under sections ‘Reported problems’ and ‘Complementary actions and policies’.

7.3.1 Producer responsibilities

As part of the extended producer responsibility, with the coming into force of the French regulations for WEEE, the household EEE producers were made responsible for the removal and treatment of household WEEE separately collected in the national territory. The producers are expected to fulfil these obligations either by joining one of the collective schemes already approved by the authorities, in proportion to the amount of equipment that they place on the market or by creating individual systems – which also need the approval of the authorities – for the waste corresponding to their own equipment. On what concerns the choice for the individual option, until the release of the report provided by ADEME on the WEEE waste stream in 2013, no record of a request of approval has been registered.

Even though the legislation made possible for producers to choose for an individual system (articles R. 543-191 and R. 543-192), all producers have decided to be a part of one of the compliance schemes – or ‘eco-organisms’ as a translation from French – authorised according to the provisions established by articles R. 543-189 and R. 543-190 EC. The existing compliance schemes are Ecologic³⁸² (general WEEE), Eco-systèmes³⁸³ (general WEEE), Récyclum³⁸⁴ (lamps and professional WEEE), and PV Cycle³⁸⁵ (photovoltaic panels). With the exception of PV Cycle, created and authorised in 2014, these compliance schemes have been operating in the sector of household WEEE in France ever since they were first authorised by the Ministerial Orders of 2006. The existence of a coordinating organism to organise and represent the compliance schemes, OCAD3E, was also provided for by anti-

382. France, Arrêté du 9 août 2006 portant agrément d'un organisme ayant pour objet d'enlever et de traiter les déchets d'équipements électriques et électroniques en application de l'article 14 du décret n° 2005-829 du 20 juillet 2005. JORF n° 186 du 12 août 2006 page 12019 texte n° 33.

383. France, Arrêté du 9 août 2006 portant agrément d'un organisme ayant pour objet d'enlever et de traiter les déchets d'équipements électriques et électroniques en application de l'article 14 du décret n° 2005-829 du 20 juillet 2005. JORF n° 186 du 12 août 2006 page 12018 texte n° 32.

384. France, Arrêté du 9 août 2006 portant agrément d'un organisme ayant pour objet d'enlever et de traiter les déchets d'équipements électriques et électroniques en application de l'article 14 du décret n° 2005-829 du 20 juillet 2005. JORF n° 186 du 12 août 2006 page 12017 texte n° 30.

385. France, Arrêté du 24 décembre 2014 portant agrément de l'organisme PV CYCLE en tant qu'eco-organisme pour la filière des déchets d'équipements électriques et électroniques ménagers en application des articles R. 543-189 et R. 543-190 du code de l'environnement. JORF n° 0302 du 31 décembre 2014 page 23314 texte n° 27.

cle 14 of Decree 2005-829.³⁸⁶ Both coordinating organism and compliance schemes are expected to periodically request for the renewal of the authorisation in the case they have the interest to continue with their activities. The latest Ministerial Orders have been published on 24 December 2014 and are valid from 1 January 2015 until 31 December 2020.

The function of the coordinating organisation for the compliance schemes on the WEEE sector, currently OCAD3E, is coordinating certain activities of recognized environmental bodies and approved individual systems, ensuring the overall coherence of the sector. They are privileged interlocutors for local authorities by offering a stable legal and fiscal framework to ensure continuity of payments for financial compensation in return for the establishment of a separate collection of household WEEE, and continuity of captures of household WEEE that communities collect separately, as mentioned on Articles R543-181 to R543-83 Environmental Code.

Producers are also required to register with the WEEE Register on the online platform named SYDEREP³⁸⁷ (website for declarations concerning extended producer responsibility reporting on different waste streams) and to report annually during the reporting period (February-March) the quantities of EEE placed on the market and WEEE collected and treated through their collective scheme or individual system. In January 2015, the Ministry of Ecology, Sustainable Development and Energy informed an approximate figure of 5,500 household EEE producers and 1,600 professional EEE producers on the register of producers kept by the ADEME for the year 2013.

7.3.2 Distributor and retailer responsibilities

Decree 2014-928 brought in its Article 4 specific rules increasing the responsibility applied to distributors which altered Article R543-180 of the Environmental Code. Previously the obligation was to organise free take-back of used EEE discarded by the consumer upon the sale of new electrical and electronics household equipment only within the limit of the amount and type of equipment sold. Within the new law, an additional ‘0 to 1’ (free take-back) for very small WEEE was included for distributors with sales area for electrical electronic equipment of minimally 400 m², and the duty to inform the consumer of the possibilities available for discard of WEEE.

Even further, the Order of 8 October 2014 included specific procedures to be followed by the distributor referring to the ‘1 to 1’ take-back from Art. R543-181-I. The first Article of the Order brings three possibilities for the

386. France, Arrêté du 22 septembre 2006 portant agrément d’un organisme coordonnateur en application de l’article 9 du décret no 2005-829 du 20 juillet 2005.

387. SYDEREP gathers the Observatories and Registers of the following sectors: Electrical and electronic equipment -EEE; Batteries and accumulators -B&A; Fluorinated gases; Tires; End of life vehicles (ELV).

consumer: 1. For in store purchases, the take-back shall be provided in store; 2. In the case of delivery of the new EEE on its place of use, the collection of WEEE shall be offered at the occasion; 3. When other cases of distribution occur, the take-back shall be made available at the place of delivery of the new EEE, or by the collection system financed and organised by the distributor, or a solution for discarding shall be offered by postal service or an equivalent service.

It is interesting to observe that the draft version of Order of 8 October 2014 contained an extra paragraph, in a clear attempt to enhance monitoring of WEEE flows. In this paragraph the distributor was required to ‘establish, in conjunction with professionals involved in the framework of the recovery, a traceability system to ensure that the equipment which the consumer has discarded and which are delivered to treatment operators of waste are made to operators who have a contract with the authorised compliance schemes approved under the conditions defined in Articles R. 543-189 and R. 543-190 or with producers who have implemented individual systems approved in accordance with Articles R. 543-191 and R. 543-192’. The measure would lead to a better connection between distributors and producers; yet, the final version of the Order did not include this requirement for distributors. Clearly, the extra responsibility of a traceability system directed to the distributors were interpreted as too costly and too advanced for the system’s possibilities for the time. Nonetheless, with the obligation of recovery in store or on delivery, distributors are a major player WEEE collection since it represented 26% of flows collected by eco-organisms in 2012.³⁸⁸

7.4 Particularities of the French implementation of the Directives

7.4.1 Eco-contribution Mechanism

Since 15 November 2006 French household consumers pay a recycling fee when purchasing a new electrical or electronic device. The producers of household equipment and distributors are required to inform buyers of the cost of the disposal of WEEE indicating, at the bottom of the sales invoice, the amount of the eco-contribution levied during the sale. The visibility of the treatment cost of the device at end of life at the time of purchase is particularly relevant for promoting consumer awareness. The amount is calculated based on actual costs of end of life products. Therefore, it varies according to the product, the type of treatment it requires, as well as to which *éco-organisme* its producer belongs. The amount may differ, from a dime for a mobile phone, to several euro for a TV or a refrigerator. From July 2010

388. BIO Intelligence Service 2013 (n 362) 21.

onwards the fee has been modulated according to an eco-design criteria: in the case the product does not meet certain criteria related to end-of-life recyclability or reduction on the presence of polluting components this change allows for the fee to be paid for that product to be higher.

The fee is considered an ‘eco-contribution’ (in French *éco-participation*) and are collected by the distributors and directed to the producers, the ones entitled to receive this collection. As mentioned before, the producers are organised in compliance schemes, which must be properly authorised by the State. The recycling fee has the purpose to fund the companies and local authorities in charge of logistics operations, treatment and recycling of WEEE. According to ADEME annual report 2013, in 2012, the total amount of contributions collected from the sales of household EEE placed on the market reached 181 million euro. The ‘eco-participation’ is indicated on the labels and visibly separated from the product price. It is a tool of transparency and information, as declared by the French institutions and is fully redirected to the environmental organisation (compliance scheme) certified by the government to perform the WEEE collection and treatment.

Article L541-10-2 was included in the Environmental Code by Law 2005-1720.³⁸⁹ The legal text set a transition period for the fee to be removed (from 1 of January 2006 until February 2013) and after the said date the fee was fully removed. Nevertheless, due to the government’s intentions to continue to motivate the increasing levels of collection to reach the national target, as well as to foster the recycling industry, Law 2013-344 in April 2013³⁹⁰ was approved for the modification of Article L541-10-2. The extension of the visible contribution was then postponed until 1st of January of 2020.

One of the main reasons which influenced the delay of the eco-contribution removal was the data released at the time, by Eco-Systems, of its activities in 2012. Eco-Systems, the largest compliance scheme on household waste electrical and electronic equipment, had just informed a collection rate of seven kilograms per capita in 2012, up 1.5% compared to 2011. Nonetheless, the result was not able to reach the national collection target. The calculated goal for 2019 was of fourteen kilos per year per capita causing the need for compliance schemes to be persuaded into on improving their rates became greater than ever.

The sector represents 3,556 full-time jobs including more than 1,450 jobs for the social economy sector and, above all, manages the end of life of a large stock of historical WEEE, including orphan products (whose producers no longer exist). According to ADEME’s report of 2012, which data substan-

389. France, Loi 2005-1720 du 30 décembre 2005 de finances rectificative pour 2005, Article 87.

390. France, Loi 2013-344 du 24 avril 2013 relative à la prorogation du mécanisme de l’éco-participation répercutée à l’identique et affichée pour les équipements électriques et électroniques ménagers. JORF 25 avril 2013.

tiated the bill,³⁹¹ the historical WEEE in 2011 represented the majority of the WEEE treated that year. This high percentage reflected a slow decline of historical WEEE (and orphan WEEE) in the French collection system. Having in mind that historical WEEE is the end-of-life EEE which was not subject to a recycling fee since it was put on the market before 13 August 2005,³⁹² and that the fee provides for the funding for the eco-organisms who are also responsible for collecting and recycling of historical WEEE, given the figures, there was clearly room for an extension of the use of the use of the eco-contribution.³⁹³

The decision to suspend the extinction of the e-co fee to support the costs of historical WEEE and to extend the use of the eco-contribution until January 2020 aimed at enabling the WEEE industry to maintain and expand its positive performance retraining and finding a growing waste collection rate for the coming years at the same time that it sought to provide for the sector to continue consolidating, which meant also ensuring the sustainability of existing jobs. Another reason was the fact that the visible fee was already part of the strategy of circular economy and played an important role in the fight against the illicit export of electrical and electronic waste.

7.4.2 Information and Control

Article R543-201 of the Environmental Code specifically mentions the obligation for all players involved with the EEE and WEEE flows and that they are expected to provide information for the Government as follows:

Producers, distributors, collection and treatment operators, and users or owners mentioned in Article R. 543-199 holding information concerning the placing on the market of EEE and the waste management procedures of these, at the request of the public authorities, should transmit the information free of charge.

391. France, N° 272 Sénat Session Ordinaire de 2012-2013 Enregistré à la Présidence du Sénat le 22 janvier 2013 Proposition de Loi relative à la prorogation du mécanisme de l'éco-participation répercutée à l'identique et affichée pour les équipements électriques et électroniques ménagers, présentée Par Gérard Miquel, Laurence Rossignol, Michèle André, François Patriat, Pierre Camani, Yves Chastan, Jacques Cornano, Philippe Esnol, Jean-Luc Fichet, Jean-Jacques Filleul, Mme Odette Herviaux, Alain Le Vern, Robert Navarro, Roland Ries, Yves Rome, Michel Teston, André Vairetto, François Rebsamen et les membres du groupe socialiste et apparentés.

392. Date of the implementation of the financial obligation of producers for collecting and recycling of end-of-life EEE that was put on the market since that mark.

393. BIO Intelligence Service, 'Rapport annuel sur la mise en oeuvre de la réglementation relative aux Déchets d'Équipements Électriques et Électroniques (DEEE) 2011' (October 2012) 40 <http://archive-fr.com/fr/a/ademe.fr/2014-03-01_3795122_43/Exemples_agrave_suivre/> accessed 2 May 2015.

Under Article R 543-202-1, included by Decree 2014-928 of 19 August 2014 that implemented most of the recast WEEE Directive, a national database shall collect all relevant information for the observation of the treatment of waste electrical and electronic equipment transmitted by the collection operators, other than the local authorities, the treatment operators and users or holders mentioned in Article R.543-199. ADEME has been appointed as responsible for structuring, maintaining and operating such database and, according to its official notice online,³⁹⁴ this observatory is under development and will be available at the online platform SYDEREP from 2016. The creation of an observatory on the treatment of WEEE came after the national implementation of the recast WEEE Directives. The intention of the observatory is to gather reporting data of amount of treated WEEE from other stakeholders involved in the end-of-life EEE chain other than producers/importers (collection and processing operators, and business treating WEEE themselves without going through a collective scheme or individual system).

7.4.3 Household and Business Equipment

One of the changes introduced by the Decree 2014-928 was a modified boundary defined between household and business equipment. The Decree reinforced the understanding that any equipment likely to be used by individuals should be considered as household equipment, thus, business equipment in such conditions should be collected, treated and registered according to the provisions that apply for household EEE. One of the consequences was the choice now made available for professional EEE producers between establishing an individual system (although not necessary the approval of the government as for the household WEEE) or joining a collective scheme. The former possibility to leave it for the end-user to manage the professional WEEE was no longer allowed.

The national transpositions across the Member States did not dedicate many provisions to expand the ruling of the WEEE Directives on what concerns business EEE. France on the other hand, with Decree 2012-617³⁹⁵ brings in its Articles 8 to 13 detailed regulation for producers and consumers of professional (W)EEE. The considerable specifications alter Articles R543-195 to R543-199 of the Environmental Code and surprise by establishing similar obligations to the ones directed to household (W)EEE. Adding to the Decree, the Order of 5 of June 2012 defined the procedures and specifications for the establishment of compliance schemes for professional WEEE in application to the new dispositions brought to Articles R. 543-196 and R. 543-197 EC.

394. Available at <<https://www.syderep.ademe.fr/fr/commun/deee/0/index/detail-actu/idElement/40>> accessed 22 June 2015.

395. France, Decree 2012-617 of 2 May 2012.

The reasoning presented for the specifications for producers of professional WEEE has been based on the principle of producers' extended responsibility and the understanding that the waste management of professional WEEE also must be assured by the producers of EEE. In order to comply with their obligations, the producers must either set up an individual system or join a certified collection scheme. The aim of this regulation was defined as to optimise the management of professional WEEE, improve processing - especially recycling - but also to help prevent the production of such waste, including eco-design of products. The Order established the conditions for issue and renewal of certification for management of professional WEEE for facilities that request so. The specifications brought by the Order set the conditions for a facility to be authorised, including the objectives and general principles, and the relationship with producers of electrical and electronic equipment, with professional EEE users, with the providers of removal and treatment, among others.

7.5 Reported Problems

The revision of the collection targets for 2019 brought by the recast WEEE Directive represented more than double of the annual collection of household WEEE performed in France in 2012, which was 6.9 kg per inhabitant, the equivalent of 35% of WEEE arising in that year. These figures are calculated based on the minimum collection rate to be achieved of 65% of the average weight of EEE placed on the market during the three preceding years in the MS concerned or, alternatively, 85% of WEEE generated on the territory of the same MS the numbers became quite bigger for all MS. In the case of France, based on the WEEE put on the market in 2012, the target should be equal to 14.9 kg per inhabitant annually or, considering the volume of household and similar WEEE arising evaluated at between 17 and 24kg/year/inhabitant in 2012, the target should correspond to a volume of 14 to 20kg/inhabitant.³⁹⁶

The need for increase of collection led to the urge for a more detailed knowledge and control of the WEEE flows. The latest study on French WEEE flows has been published in December 2013 on behalf of the French environment and energy management agency (ADEME) and the certified coordinating body for WEEE, clearing house (OCAD3E), which allowed for the quantification of a share of the non-registered flows, documenting in total

396. BIO Intelligence Service, 'Projet de quantification des déchets d'équipements électriques et électroniques (DEEE) en France: Gisement et destination des DEEE ménagers et assimilés' Étude réalisée pour le compte de l'ADEME et OCAD3E (December 2013) 7 <www.ademe.fr/projet-quantification-dechets-dequipements-electriques-electroniques-deee-france> accessed 2 May 2015.

60 to 80% of generated household and similar WEEE.³⁹⁷ Still, around 30% of WEEE arising – equivalent to 6.4 kg/inhabitant – could not be documented or quantified. Factors such as sorting errors, plundering, alternative systems of collection and treatment are some of the reasons for household WEEE to be diverted from WEEE Compliance Schemes.

In terms of action regarding WEEE flows, the Decree of 2 May 2012 required that WEEE treatment operators have a contract with the eco-organisations as part of a strategy to avoid free riders. Additionally, keeping track of producers selling online and their compliance with the take-back responsibilities of WEEE has been regularly monitored by the Directorate-General for Competition, Consumption and Fraud Control - DGCCRF,³⁹⁸ which is responsible for performing regular controls over WEEE.

Further on the same matter, Article L112-6 of the Monetary Financial Code was amended by Act 2014-344 of 17 March 2014, Art. 24 (IV),³⁹⁹ where it has been determined: ‘When a professional buying metals to an individual or to another professional, the payment is made by crossed check or by transfer to an account in the name of the seller. Failure to comply with this obligation shall be punishable as a fifth-class minor offence.’. The law approved for preventing all payments for scrap metal from being made by cash represented a significant change considering the common practice until then, where 80% of payments for metals in France were made in cash.

7.6 Complementary Policies and Actions

7.6.1 *Grenelle Environment*

Officially launched in July 2007, the ‘*Grenelle Environment*’⁴⁰⁰ consists of a series of political meetings organised with the aim of negotiating decisions for a long term policy on the environment and sustainable development. The meetings gathered representatives from the French government, organisations, and civil society on an equal footing and aimed at drawing up plans of action of concrete measures on the topic of environmental policies. The proposals discussed during the meetings in 2007 led to the law *Grenelle I*, voted almost unanimously in 23 July 2009 and promulgated on 3 August 2009. The law established a crucial mark on the development of the waste management system, one of the 13 fields of action defined by it. The *Grenelle Environ-*

397. The French study includes ‘WEEE similar to household WEEE’, by that, meaning WEEE from commercial, industrial, institutional and other sources which due to its nature and quantity is similar to WEEE from private households.

398. A branch of the Ministry of Economy, Industry and Digital.

399. France, Monetary and Financial Code - Section 3: Prohibition of cash payment of certain debts. Article L112-6 edited by Law 2014-344 of March 17, 2014 - art. 24 (V).

400. See more at <www.ladocumentationfrancaise.fr/dossiers/developpement-durable/grenelle-environnement-2007.shtml> accessed 5 May 2015.

ment has had an accelerator effect on the lifelines of collection of household waste. This was reflected by the rise Power WEEE collection. Thus, 2008 and 2009 experienced a 30% increase in tonnage collected WEEE.⁴⁰¹

7.6.2 National Council on Waste

Created by Decree 2001-594 of 5 July 2001, the National Council on Waste (CND) is a voluntary advisory body on matters relating to waste, particularly laws and regulations. In July 2014, its President presented proposals to give France a political perspective in the prevention and management of waste in 2025. The proposals were incorporated to the pillar of the circular economy, Plan for reducing and recycling waste, which should endow France with a political perspective for the coming decades.

7.6.3 Action against illegal sites of treatment of waste with high metal content

The concern about illegal treatment of waste was already noticeable in the text of Decree 2012-617 of May 2012. Article 7 altered the Environmental Code by including Article R. 543-194-1, where treatment operators were no longer allowed to treat WEEE from selective collection without having a contract with a take-back system.

Still, one of the main topics discussed by the round table about circular economy at the environmental conference of September 2013 was the importance of resolute government action against illegal channels of waste treatment. The topic was set as a priority for 2014 and a process to be continued and expanded. At the same time, a control action on scrap metals to deal with illegal WEEE was also put into place, in conjunction with the police. The control action focuses on checking the activities performed by treatment operations facilities and identifying if they are complying with their due obligations according to the ICPE⁴⁰² and their obligation of having a contract with a compliance scheme for managing household WEEE originated from separate collection or in-store take-back. Finally, a control over shredders was included in the strategy as they were recognised as an essential step especially in the treatment chain of high value metallic fraction waste. Shredders were given the obligation to only treat traceable waste from certified

401. French Ministry of the Environment, Energy and the Sea, 'Grenelle Environnement: un combat continu' (2010) 4 <www.developpement-durable.gouv.fr/Grenelle-Environnement-un-combat.html> accessed 20 March 2016.

402. Les installations classées pour la protection de l'environnement (Listed establishments for environmental protection). Refers to an establishment whose activities – either of an industrial or agricultural nature – present a risk or inconvenience to the human and natural environment.

establishments. The sites are controlled by DREAL⁴⁰³ which seeks to prevent them from endorsing illegal channels.⁴⁰⁴ A coordination of the police as well as a harmonised set of actions both on a European basis are some of the main necessary measures strengthen the model and considerably improve national enforcement particularly concerning limitation of used EEE and metal exports, the greatest channels for illegal WEEE flows.⁴⁰⁵

7.7 Conclusions

From the early stages of WEEE management regulation in France, considerably clear and steady policies have been adopted leading to a positive level of awareness and commitment from the stakeholders part of the WEEE management system. The Ministry of Environment reportedly informs to rely on Extended Producer Responsibility (EPR) as a versatile and powerful tool to develop robust waste policies, even though EPR schemes should not be considered ‘a silver bullet to address waste management’. It is the understanding of the Ministry of the Environment that EPR should be combined with other types of tools – from regulatory frameworks to fiscal tools (pay-as-you-throw schemes, landfill taxes), standards, public procurement policies, and others – for better results to be obtained.⁴⁰⁶

As for the details provided from the first decree on the transposition of the WEEE Directive in 2005 there have been few shifts on the policies. Instead, only subtle improvements have been applied in order to clarify concepts and enhance procedures. Already in its first results, the French implementation of the Directive 2002/96/EC has presented considerably successful, considering the collection rates from municipalities implementing of more than 20%. The French choices involved focus on regulation actions, legal actions, involvement of municipalities (including financial support), and operational actions.

403. Direction regionaux de l'environnement, de l'aménagement et du logement (Regional Directorates of the Environment, Planning and Housing). As part of the State reform, in December 2007, the Public Policy Modernization Council decided to create a unified regional level of the Ministry of Sustainable Development: the Regional Directorate of the Environment, the Planning and Housing (DREAL). The new regional structure was set to conduce the sustainable development policies arising particularly from the commitments from the Grenelle Environment, as well as those from Planning and Housing.

404. French Ministry of the Environment, Energy and the Sea, Direction générale de la prévention des risques. Instruction du Gouvernement du 12 mars 2014 définissant les priorités de l'inspection des installations classées pour l'année 2014. MEDDE - METL no 2014/6 du 10 avril 2014, 114-115.

405. As reinforced by producers take-back schemes, such as Eco-Systèmes, in presentation to EPR club on 27 February 2013, Brussels.

406. French Ministry of the Environment, Energy and the Sea, '20 years of EPR in France: achievements, lessons learned and challenges ahead' (2014) 7
<[https://www.oecd.org/environment/waste/France%20\(final\).pdf](https://www.oecd.org/environment/waste/France%20(final).pdf)> accessed 29 March 2016.

A legal framework specifically directed to fight illegal activities, provide for more secure WEEE flows, as the main goal of improving the collection rates.

In the same direction, it is relevant to highlight the existence of multiple PROs in the French system for take-back of WEEE as in opposition to one single PRO (the case, for instance, of textile EPR system). The 'single PRO' model is often easier to operate for public authorities and simpler to understand for all stakeholders, on the other hand, in the 'monopolistic' situation questioning the orientations taken by the PRO can be more difficult. In the 'multiple PRO' model, the organisation is obviously more complex: a 'coordinating entity' was set up to organise studies of common interest to all PROs, and to secure the distribution of municipalities between the PROs in order to avoid multiple contracts for local authorities. However, in the multiple PRO model there is competition between the schemes which can bring positive effects by avoiding the abovementioned monopolistic risk, and, thus, lead PROs to reduce their fees. Certainly, the concern for the existence of clear and effective legal rules that are able to limit the reduction of fees that are made at the expense of environmental quality are highly relevant.⁴⁰⁷

Moreover, all schemes feature an inclusive governance model that associates all stakeholders: from producers, municipalities, waste management operators, environmental NGOs, to consumer organisations, and public authorities. All involved have the possibility to participate in decision-making on the design and ambition of the scheme. Since PROs must be granted an approval by public authorities every 6 years, this 6-year cycle includes an in-depth stakeholder consultation process to draft an updated 'terms of reference' which may also lead to detailed negotiations with stakeholders. PROs enjoy a good level of flexibility regarding organisation of daily operations. Nonetheless, they are expected not to deviate from the objectives specified in the 'terms of reference'.⁴⁰⁸

As mentioned in the chapter about the drafting process of the Directives and their transposition into national legislation in general, the choice for a clearing house model has been noticed to provide for the most effective national WEEE systems in Europe. The reason seems to be the key role of the clearing house on intensively and fairly regulating the allocation of WEEE among PCSs. France represents one of these examples.

407. *ibidem* 2.

408. *ibidem* 3.

Best practices and the Nordic countries: Denmark, Finland, Norway and Sweden

8.1 Introduction

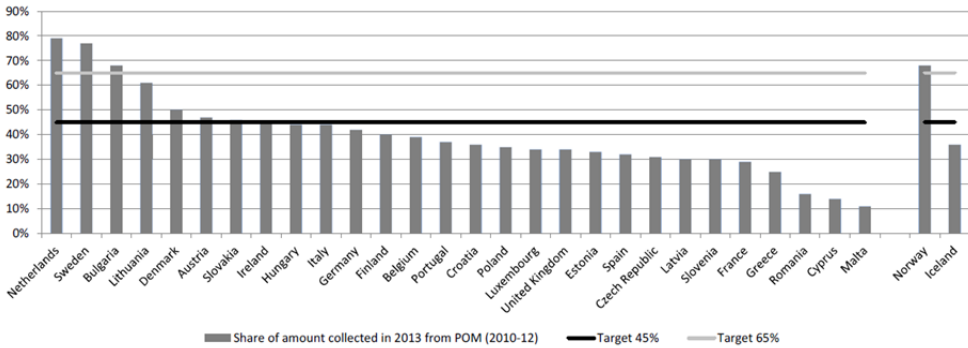
In the latest reports made available by the European Commission in 2015,⁴⁰⁹ data provided by Member States and EEA Agreement signatories from 2012 collections were analysed and revealed that eight EU Member States (Bulgaria, Denmark, Italy, Lithuania, the Netherlands, Austria, Slovakia and Sweden), added to EEA Agreement signatories Norway and Liechtenstein as having achieved the 45% target set for 2016 already in 2012. The studies also revealed Bulgaria, the Netherlands and Sweden as having exceeded (in 2012) the 65% collection target set for 2019 (although the document recommends certain caution considering the rate reported by Bulgaria, due to the possibility of underestimation of amount put on the market, and to the one from the Netherlands, as a different methodology had been used until 2011).⁴¹⁰

In order to visualise the performance of the European countries that have implemented the EU WEEE Directive 2002/96/EC, the following figure has been included. It was based on official data from the statistical office of the European Union (Eurostat). The figure indicates the collection rate of WEEE per country as a percentage of the average weight of EEE put on the market in the three preceding years (2010–2012).

409. Eurostat, 'Waste statistics - electrical and electronic equipment' (data from May 2015) <http://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics_-_electrical_and_electronic_equipment> accessed 3 August 2015.

410. Eurostat, 'Directorate E: Sectoral and regional statistics, E-2: Environmental Statistics and Accounts; Sustainable Development - Country specific notes on Waste Electrical and Electronic Equipment (WEEE)' (2014) 2, 5.

Figure 8.1 Collection Rate per Country

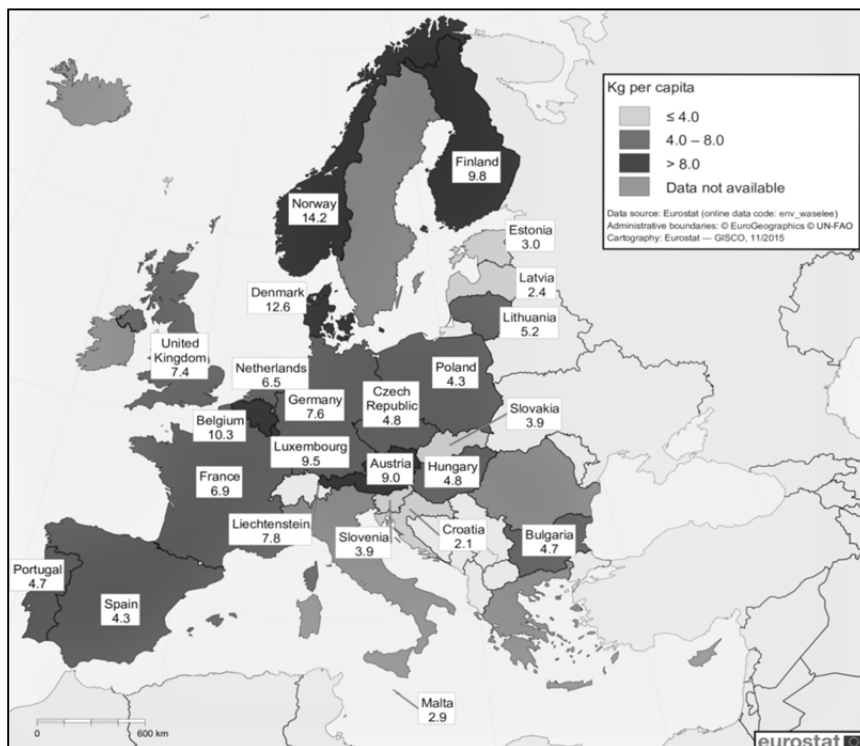


Source: Eurostat, 'Waste statistics - electrical and electronic equipment'
<http://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics_-_electrical_and_electronic_equipment> accessed 3 August 2015

The reference of articles, studies, and reports to the considerably successful performance of the Nordic countries in the EU on what concerns WEEE management did not go unnoticed during this research. In this chapter, the attempt is to identify and explain possible differences in practices, policies, and contexts that have contributed to the noticeably higher rates of the Nordic countries' WEEE collection and treatment once compared to the ones of other European States.

Hence the question; what makes the Nordic countries more successful when it comes to the ecologically safe and proper management of WEEE? Perhaps the explanation lies in a particular aspect of their geographical location? Maybe they get their edge from pre-existing regulations and the implementation processes of the WEEE Directives? The chapter will study the national legislation and review reports of these countries seeking to bring some light for explaining the current situation and identifying crucial differences on choices of implementation that might be used to improve other WEEE systems.

Figure 8.2 Waste Electrical and Electronic Equipment collection rate from households 2013



Source: Eurostat, 'Environmental Data Centre on Waste – WEEE'

<<http://ec.europa.eu/eurostat/documents/342366/351758/weee-collection.pdf>> accessed 3 August 2015.

8.2 Denmark

8.2.1 Legislative implementation of WEEE Directives in Denmark

It was the late 1990s when the consequences of the increasing amount of e-waste produced in the country were made official by the Danish Ministry of Environment. Until then not much had been registered about the destination of the end-of-life EEE in Denmark. WEEE was assumed to be disposed of along with bulky waste collection points or municipal recycling facilities and only part of it would be treated for metal recovery. The growing concerns towards this particular waste stream and the environmental hazard it represented led the Danish government to take actions to elaborate and publish the

statutory order on placing on the market of electrical and electronic equipment, the (first) Electronic Waste Order of December 1998.⁴¹¹

With the come into force of the WEEE Directive, the Danish Electronic Waste Order was revised in 2005⁴¹² for incorporating the new restrictions brought by its provisions. The amendment primarily affected provisions for fees paid by the producers to DPA-System for administrative handling of the producer responsibility scheme. The Danish Ministry of Environment was made responsible for transplanting the WEEE Directive into the national legal framework, as well as for the enforcement and monitoring of the targets and procedures specified on its provisions. Further in 2010,⁴¹³ the WEEE Order was replaced by a new version, with more amendments and this was repeated in December 2011.⁴¹⁴ There have been three previous WEEE Orders in the Danish legislation until the forth and current version has been published containing provisions from the recast WEEE Directive.

The recast WEEE Directive of 2012 was implemented into national law in February 2014 by means of the Danish Statutory Order on placing on the market of electrical and electronic equipment and management of waste electrical and electronic equipment, the new WEEE Order.⁴¹⁵ The previous edition of the WEEE Order (Order No 1296 of 12 December 2011) was also abolished. The new order brought along with it changes corresponding to the new Directive: new rules for representatives, recovery targets, updated requirements for product design to facilitate recycling, clarification of the definition of ‘producer’. As informed by the Environmental Protection Agency, the new Order also included changes that had been requested by the industry. The reduction of administrative burdens, and changes on producer guarantees (eased requirements).

In addition to the WEEE Order of 2014, the new WEEE Directive was implemented into national legislation by amendments to the Environmental

411. Danish Miljøministeriet, Bekendtgørelse om håndtering af affald fra elektriske og elektroniske produkter, BEK nr. 1067 af 22/12/1998 <www.retsinformation.dk> accessed 22 September 2015.

412. Danish Miljøministeriet, Bekendtgørelse om håndtering af affald af elektrisk og elektronisk udstyr (Elskrotbekendtgørelsen), BEK nr. 664 af 27/06/2005 <www.retsinformation.dk> accessed 22 September 2015.

413. Danish Miljøministeriet, Bekendtgørelse om markedsføring af elektrisk og elektronisk udstyr samt håndtering af affald af elektrisk og elektronisk udstyr (Elektronikaffaldsbekendtgørelsen), BEK nr. 362 af 06/04/2010 <www.retsinformation.dk> accessed 22 September 2015.

414. Danish Miljøministeriet, Bekendtgørelse om markedsføring af elektrisk og elektronisk udstyr samt håndtering af affald af elektrisk og elektronisk udstyr (Elektronikaffaldsbekendtgørelsen), BEK nr. 1296 af 12/12/2011 <www.retsinformation.dk> accessed 22 September 2015.

415. Danish Miljøministeriet, Bekendtgørelse om at bringe elektrisk og elektronisk udstyr i omsætning samt håndtering af affald af elektrisk og elektronisk udstyr, BEK nr. 130 af 06/02/2014 <www.retsinformation.dk> accessed 22 September 2015.

Protection Act, published on 29th of January 2014,⁴¹⁶ and the Decree on shipments of waste.⁴¹⁷

8.2.2 The Danish WEEE System

The first Danish regulation for WEEE was the statutory order identified as Electronic Waste Order of 1998 which brought responsibility for the municipalities which were designated to be in charge of the separate collection of WEEE and had its legal basis on the Environmental Protection Act⁴¹⁸ of 1998 §§ 44, 45(2), 81, 92 and 110(3). Private waste treatment companies would then buy the collected WEEE and treat it in order to sell the recovered fractions afterwards.

Ever since the Danish Electronic Waste Order, the main actors that have been clearly established: producers, municipal waste collection authorities, private waste treatment companies, the Danish Producer Responsibility System (DPA-system),⁴¹⁹ which was established as a result of the Order, functioning as the Danish clearing house, and four privately-organised collective producer responsibility organisations (PROs) that coordinate and administer the actions for the WEEE collection system. These two last type of actors came to exist as a result of the Danish process of transposing the WEEE directive into national legislation and, consequently, implementing the EPR principle.

The Danish separate collection of WEEE did not face great changes once the transposition of the WEEE directive was concluded. The municipalities were maintained as the ones responsible for organising accessible systems of WEEE collection according to population's density and, differently from what had been established by the 2002/96/EC WEEE directive, they also continued as the operators of the physical collection of household WEEE and, most interestingly, bearing the costs of its collection. That is, instead of having the producers bearing the financial and physical responsibilities of collection of WEEE, the tax payers are the ones who bear the financial responsibility of WEEE collection in Denmark, and the municipalities the ones

416. Danish Miljøministeriet, Lovbekendtgørelse om ændring af lov om miljøbeskyttelse, LOV nr. 87 af 28/01/2014 <www.retsinformation.dk> accessed 22 September 2015.

417. Danish Miljøministeriet, Bekendtgørelse om overførsel af affald og overførsel af brugt elektrisk og elektronisk udstyr, BEK nr. 132 af 06/02/2014 <www.retsinformation.dk> accessed 22 September 2015.

418. § 44. The Minister may lay down rules on the disposal of waste, including the review, sorting, storage, collection, transportation, treatment and recycling of waste. The rules may also include specific types of waste, waste materials and waste products. § 45. The municipal council is responsible for disposing of the waste. [...] 2) the municipal council's duty to take charge of the collection and disposal of waste, including the recycling of materials and products. For more see Miljøministeriet. Bekendtgørelse af lov om miljøbeskyttelse <www.retsinformation.dk> accessed 22 September 2015.

419. In Danish, Dansk Producent Ansvar.

shouldering the physical one. The only major change occurred in the Danish system since the transposition of the WEEE directive was the transference of the responsibility for organising transportation and sales of WEEE to private treatment facilities from the municipalities to the collective PROs, which, in turn, have their work coordinated by the clearing house.

Hence, concerning producers' responsibilities, on the one hand they are financially expected to cover the costs of treating WEEE in Denmark, but, on the other, they do not have direct physical responsibility to this treatment. Either one of the environmental approved recycling companies for WEEE are hired by the collective scheme to which the producer is a member or the collective scheme itself, in the case it has its own vehicles, performs the collection at the municipal collection stations. Besides taking over the responsibility regarding the logistics of the whole EEE-WEEE collection and the remaining WEEE treatment processes, the collective scheme also takes over the producer's responsibility regarding documentation of all WEEE processes (and reporting to DPA-system).

The producer responsibility organisations are non-profit institutions created by the producers with the aim of providing services on their behalf. These include producer registration, annual reporting to DPA-system, and the payment of financial security. In order to fulfil such obligations, the collective PROs must calculate each of their members' market share and charge them for their treatment costs accordingly, besides managing the coordination and payment between the municipal waste collection points, transport companies, and waste treatment facilities, and reporting such information to the DPA-system. There are currently four collective schemes actors in Denmark: Elretur, ERP (European Recycling Platform), RENE AG (Recycling Network Europe), and LWF (*Lyskildebranchens WEEE Forening*). The collective schemes act as competing actors in the Danish market, with the EEE producers as customers. A producer can decide to join the collective scheme of his preference according to the quality of the reporting service provided. The use of a visible fee for financing of the management of historical WEEE is optional.⁴²⁰

At the position of a clearing house, the DPA-system is a non-profit organisation, governed by members from industry, interest organisations, and NGOs, which is overall responsible for the WEEE collection system. The DPA-system is the competent authority nominated to perform administrative tasks of keeping track of producers acting on the national market – registration – and receiving annual reports – where producers inform compliance

420. Danish Ministry of the Environment, 'Greening of Electronics, Environmental Project No 1416' (The Danish Environmental Protection Agency 2012) 11
<www2.mst.dk/Udgiv/publications/2012/07/978-87-92779-99-1.pdf> accessed 23 September 2015.

with their EPR – in order to write reports to the Danish Ministry of Environment and to the EU.⁴²¹

8.2.3 Evaluation of the Danish performance

The Danish transposition of the WEEE Directive and the principle of Extended Producer Responsibility into national law, which brought the figure of a clearing house, is identified as a positive and successful process that is mostly a consequence of a ‘highly-participatory process that incorporated the advice and requests of industry interests at every step along the way.’⁴²²

In practice, the implementation of the producer responsibility scheme has led to a significant centralisation of the entire WEEE cycle in Denmark. Before this, 273 local authorities (98 authorities after a local government reform) were responsible for all stages of collection and treatment of WEEE from households in their territory. Today, local authorities are responsible for collection of WEEE from their citizens (households) and separation into five fractions. The task of making collection equipment available and treatment of WEEE at national level is now assumed by producers by means of the collective schemes.

One concern that remains under the Danish Environmental Protection Agency’s attention is the gap existing between the total amounts of EEE marked and collected. Different reasons have been identified to be contributing to such different and, although the ‘attic-effect’⁴²³ or stockpiling factor certainly plays a role in the Danish scenario, as well as consumer behaviour in the sense that little EEEs are thrown away into private household containers that are sent for combustion at incineration plants. According to DPA-statistics the gap is most likely due to an incomplete reporting system as WEEE fractions being directly collected at private collection and recycling sites which collect mainly WEEE originating from B2B producers and are not part of the collective scheme managing the EPR in Denmark.

In order to explore the business potential of the so-called urban mining industry, Denmark has announced investments in the period 2013-2017 of double-digit million amount for projects that lead the country to reach a new competitive level. Valid data quality has been observed as the basis for a real assessment of the business potential in this resource industry and DPA-

421. DPA-System, ‘Distribution of responsibilities between DPA-System, producers and collective schemes’ (2014) 7 <<https://www.dpa-system.dk/en/DPA/Documents>> accessed 25 September 2015.

422. Esther Kristensen, Bryn Lindblad and Jonas Mortensen, ‘The WEEE Directive & Extended Producer Responsibility - Lost in transposition’ (Roskilde University – ENSPAC – TekSam – K1 – Fall 2011) 30 <<http://rudar.ruc.dk/handle/1800/7209>> accessed 20 September 2015.

423. Meaning a situation where old used products are stored away instead of being disposed. Danish Ministry of the Environment (n 420).

System has been actively involved for the study of resource flows and the continuous coordination with associated projects that initially focus on optimising the collection and recovery of the resources encompassed in waste electrical and electronic equipment.

8.3 Finland

8.3.1 Legislative implementation of WEEE Directives in Finland

Although the concept of producer responsibility was known in Finland since the 90's and the Government's Decrees for waste tires (1296/1995), packaging (962/1997), and paper (883/98), the legislation had to be harmonised with the European Directive of 2002 for WEEE. In 2004 the Finnish Waste Act (1072/1993) received amendments (452/2004) to include the provisions (Chapter 3a) brought by the Directive specifically on waste electrical and electronic equipment responsibility towards manufacturers and importers of EEE. Furthermore, later the same year, a Decree on Waste Electrical and Electronic Equipment was enacted and incorporated into the national legislation (852/2004).

On the matter of visible fees, Finland made a very clear choice already at the national implementation of the WEEE 2002/96/EC Directive, on the Government Decree on Waste Electrical and Electronic Equipment of 2004. In its Section 8(1) and (2) the decision on the use of visible fee to finance the management of WEEE was settled as follows.

Section 8 – Showing management costs in the price of a product

(1) Costs incurred in waste management of waste electrical and electronic equipment from private households produced from electrical and electronic equipment put on the market after 13 August 2005 may not be shown separately to purchasers at the time of sale of new products.

(2) Producers are allowed to show purchasers, at the time of sale of new products, the actual costs incurred in waste management of waste from private households produced from equipment put on the market before the date referred to in subsection 1 until 13 February 2011 and, for equipment that falls within category 1 of Appendix 1, until 13 February 2013.

Also a considerable attention to reuse has been noticed within the Decree on WEEE. Section 6 refers to separate collection and highlights the responsibility of producers towards proper collection and storage in a way that do not prevent collected WEEE from being primarily reused.

Section 6 - Separate collection (...)

(3) Producers shall organise the delivery of separately collected waste electrical and electronic equipment to an authorised treatment facility unless the ap-

pliances are reused as a whole. Waste electrical and electronic equipment shall be collected and stored in such a way that whole appliances and components thereof that are suitable for reuse and recycling can primarily be reused or, as a secondary alternative, recycled as well as possible.

With the recast WEEE Directive, the Finnish Waste Act was reformed since several previous had caused it to become incoherent. Added to this factor was the implementation of the Waste Framework Directive of 2008 (2008/98/EC). Although no major modifications in producer responsibility on WEEE were included on 2011's reformation process, as occurred in other Member States, the national implementation of the recast WEEE Directive brought clarification on roles and responsibilities of the many actors part of the WEEE take-back system. The mandate of the national inspecting and controlling authority was also enhanced by the act.

In May 2012 the reformed Finnish Waste Act (646/2011) came into force, although specific articles referring to producer responsibility – due to its complexity for compliance – took effect a year later, on 1st of May of 2013. The Act received further amendments in 2014 (410/2014) with the insertion of detailed measures⁴²⁴ for promoting reuse, including the possibility of government decrees being issued for further provisions.

8.3.2 The Finish WEEE System

Before the 2002 WEEE Directive was implemented into national legislation, Finland did not have the operational preconditions to a nationwide WEEE recovery infrastructure. Nonetheless, after the enactment of the new legislation, EEE producers performed fast adjustments and according to registers, more than 500 producers joined the producer take-back schemes in 2005.⁴²⁵

Even though Finland did not have a national system for WEEE management prior to the WEEE Directive, a high proportion of discarded household appliances rich in metals (refrigerators, washing machines, stoves) were already recycled prior to 2003. At that time, the majority of electronic goods retailers, once buying new equipment, would take back old ones and pay for a discard fee. Individuals were also given an opportunity, albeit a limited one, to dispose of the waste equipment at designated as waste management centres, in the largest cities.

One particularity about Finland is the fact that the great majority of the electronic devices sold on the market are imported. Most likely due to this characteristic, most of the representatives of foreign producers and the domestic ones have preferred to transfer their responsibility concerning the

424. See Section 52 Measures for promoting reuse of the Finnish Waste Act, 2014.

425. Jenni Ylä-Mella and others, 'Implementation of Waste Electrical and Electronic Equipment Directive in Finland: Evaluation of the collection network and challenges of the effective WEEE management' (2014) 86 Resources, Conservation and Recycling 38-46, 41.

take-back of WEEE to producers associations. Nonetheless, unlike in most of the European countries that have implemented the WEEE Directives, a considerable number of companies had registered for complying with their producer responsibilities as individual producers at the Producer Register.

Currently there are five producers associations in Finland, all responsible for providing centralised services to manage all actions implied by the obligations set out in the WEEE Directives and implemented into Finnish legislation. The following three associations: Finnish Lamp Importers and Producers Association (*FLIP ry*), ICT Producer Cooperative (*ICT-tuottajaosuuskunta*) and Electrical and Electronic Equipment Producers' Association (*SELT ry*) although are different institutions, since 2004 have decided to join under an umbrella organisation and nowadays perform their activities under the name of the service provider Elker Ltd. Beyond these, there are the two institutions that operate independently: the Association of Electric and Electronic Equipment Manufacturers and Importers (*SERT-tuittajayhteisö ry*, *SERTY*) established in 2000, and the European Recycling Platform Finland (*ERP Finland ry*), created in 2005 initially under the name *Nordic Electronics Recycling Association*, *NERA ry*).

Collection of WEEE in Finland has been arranged based on permanent collection points and seeking to ensure the overall functioning of the producer responsibility schemes in that aspect, the Finnish Waste Act (646/2011) brought clauses on cooperation between producers associations. The requirement for a nationwide network was initially set by the Finnish Inspecting and controlling authority of WEEE (*ELY Center Pirkanmaa*) as a minimum of 340 permanent reception points distributed throughout 235 municipalities to each producers association. More recently, most of the reception points are financed by the producers associations in a collective way and are managed by municipal waste companies. The number had grown to 451 reception points in 277 different municipalities by 2011.

Concerned about the efficiency of permanent collection systems when it comes to long distances and small amounts collected, the Finnish system has adopted a different strategy for the fifty smallest and most sparsely populated municipalities. For these fifty municipalities, the collection of WEEE is performed in a mobile way, meaning that once or twice a year producers associations indicate dates and places specifically for each of them to inform their citizens to participate.

Another particularity of the Finnish system has been the strong resistance from the retail business to take-back end-of-life EEE. Only with the inclusion of the provisions from the Directive 2012/19/EU that the retailer take-back option has been fully implemented in the country, in the same terms brought by the Directive. After transportation is organised from the reception points and registered stores by the producers associations the Finnish WEEE reaches the regional treatment plants. At this stage, the national implementation of the Directive brought greater attention to reuse than other Member States as

WEEE is sorted and functional equipment are separated and directed for preparation for reuse.

8.3.3 Evaluation of the Finish performance

Since 2007, despite of the existence of wide, sparsely populated areas in the Northern and Eastern parts of the country, the national collection rate on WEEE has already exceeded 9kg/inhab./year putting Finland among the most successful countries in the European context. The collection and recycling of WEEE as established in the country evidently have been achieving environmental gains, nonetheless, activities related to WEEE recovery business are still at an early stage. The fact is that, along with the national development of the WEEE management system, inefficient practices – mainly at the registration and collection stages – still persist. Since the early stages of the Finnish implementation process of the first WEEE Directive a few difficulties were identified as particular to the country's experience.

Even though the primary goal of the Finnish WEEE legislation is to prevent waste generation and to promote reuse, recycling and other forms of recovery of such waste, the current system is criticised for not promoting proper reuse or refurbishment of electronics. Some of the concerns are towards the size of the collection points due to the fact that, in the case of small reception points, the physical limitation of space often leads to careless handling and inappropriate storage of WEEE. This type of behaviour consequently reduces possibilities for reuse or refurbishing. In order to enhance those possibilities, a suitable separation of collected WEEE into WEEE that can be reused and WEEE that cannot be reused should be intensified. Moreover, a standardised testing and refurbishing system should be established so that the market of reused and refurbished EEE can be expanded in Finland.

Other points of concern are the persistence of some companies in behaving as free-riders, as well as the rise of unofficial collection points. These factors were identified as greatly responsible for affecting the functionality and cost-effectiveness of the system.⁴²⁶ Likewise, long distances also bring challenges to managing the WEEE take-back system effectively. For this reason cooperation and efficient information flow between the actors and producers co-operatives are of major importance.

Finally, a point of concern non-exclusive to Finland is the stockpiling of end-of-life WEEE. This rather common habit among consumers reaches high storing rates particularly of mobile phones. The storage of (small) WEEE, beyond indicating that the proximity of collecting points is inadequate, deprives the potential reuse of those products as well as prevents that valuable substances are recovered, risking the take-back cycle.

426. *ibidem* 45.

8.4 Norway

8.4.1 Legislative implementation of WEEE Directives in Norway

Norway is among the first countries to adopt producer responsibility for WEEE before the existence of the European WEEE Directive 2002/96/EC. The concern of the Norwegians with producer responsibility can be traced back to 1976,⁴²⁷ the year when the Act No 79 relating to the control of product and consumer services was created. On 16 March 1998, pursuant to Section 33⁴²⁸ of the Act No 6 of 13 March 1981 (the Pollution Control Act), the Ministry of the Environment (MoE) enacted⁴²⁹ the Regulations regarding Scrapped Electrical and Electronic Products.

The Norwegian scheme for WEEE, put in place already in 1999, was the result of a voluntary agreement made between the Ministry of Environment and the Electric and Electronic Industry and the Business sector and a reflex of the EE Regulations published a year before. According to the agreement, an EPR system for WEEE financed by producers and importers should be established and the target of 80% collection rate should be achieved by 1 July

427. Norway, Act No 79 of 1976 relating to the control of products and consumer services of 11 June 1976 (Product Control Act) *Lov om kontroll med produkter og forbrukertjenester* (produktkontrolloven).

428. Norwegian Pollution Control Act No 6 of 13 March 1981. Section 33. Recycling and other treatment of waste. In order to solve waste or pollution problems, the pollution control authority may, by regulations or by individual administrative decisions, stipulate that waste shall be recycled or otherwise treated. The pollution control authority may according to this, inter alia make decisions with regard to: a) re-use; b) recycling of materials; c) utilization of energy; d) destruction; e) collection, storage, sorting; f) aims with binding effect relating to re-use, recycling etc. In such decision importance shall be attached to whether the total environmental benefits achieved are reasonable in proportion to the costs, and to the costs of other ways of handling the waste. Decisions as mentioned in the first paragraph may be made in relation to anyone manufacturing, importing, marketing or using waste producing products and to anyone collecting or possessing waste. If a voluntary arrangement is not reached between the parties, a decision as mentioned in the first paragraph may also be made in relation to anyone who can use or treat waste from others if 1) this is necessary to ensure an adequate treatment of waste that can cause serious pollution or health damage, or 2) such decision is necessary to obtain a satisfactory implementation of an organised system for collection and treatment of waste. Anyone who delivers waste to someone who according to the fourth paragraph is under obligation to receive such waste, shall indemnify the recipient and shall deliver the waste on terms that ensure the recipient a reasonable remuneration for his work. If the waste has a value beyond this, the recipient of the waste shall pay a reasonable remuneration for the waste. The parties may require the question of remuneration to be settled by arbitration pursuant to Act of 13 August 1915 relating to Civil Procedures.

429. See Royal Decree of 8th July 1983 and 11th June 1993 No 785, and Section 4 of the Act of 11th June 1976 No 79 on Control of Products and Consumer Services (the Product Control Act), see Royal Decree of 7th September 1990 No 730.

2004. In order to achieve such goals three large take-back schemes were formed: *Elektronikkretur*, *Hvitevareretur*, and *RENAS*.⁴³⁰

The national legislation on WEEE is recognised as one of the base models for Directive 2002/96/EU due to innumerable similarities between them. Still, the requirements established by the first WEEE directive modified the pre-existing legislation. Although Norway is not a member of the European Union, it is obliged by the agreement on the European Economic Area (EEA-agreement) to implement the WEEE Directives (internal market matters). The modifications were introduced⁴³¹ into the Norwegian legislative framework by the revision of Chapter 1 of the Waste Regulations (FOR 2004-06-01 No 930), which came into effect on 1 July 2006. Shortly after, the Waste Regulations were further amended by Regulations No 406 of 2 May 2005 and Regulations No 754 of 27 June 2006 as a reflex of the amendments suffered by the WEEE Directive itself (Directive 2003/108/EC). One of the few changes to the Norwegian regulations included the imposition of an obligation on all importers and exporters of EE products to be a member of a return company by 1 July 2006.

The revised WEEE directive reflected on the Norwegian regulation a proposal by the Norwegian Environment Agency⁴³² for changes intended to ensure an enhanced proper handling of the dangerous substances in e-waste, increase recycling of valuable materials of electronic waste and contribute to a stable collection of WEEE throughout the country. The changes also intended to help promoting reuse of EEE still functioning, more equal conditions to recycling companies and prevent illegal exports of WEEE to developing countries. The proposal to amend the Waste Chapter 1 on WEEE (2013/4639) was sent for public consultation until 10 March 2015.

8.4.2 The Norwegian WEEE System

Within the EE Regulations published in 1998, the provisions were much alike the ones that later would be seen in the first WEEE Directive. Since its inception the Norwegian system has defined requirements that would only be seen on the European Union Law with the publication of the recast WEEE Directive in 2012. Some of the requirements that stood beyond the EU Directive 2002/96/EC were, for instance, the coverage of all types of electronic

430. Elisabeth Román, 'WEEE management in Europe: learning from best practice' in Vanessa Goodship and Ab Stevels (eds.), *Waste electrical and electronic equipment (WEEE) Handbook* (Woodhead Publishing 2012) 493-525, 513.

431. Regulation of 2 May 2005 No 406 became effective on 1 July 2006. It amended Regulation of 1 June 2004 No 930 relating to the recycling of waste (Waste). Chapter 1 was thoroughly amended and Chapter 2 was repealed. <<https://lovdata.no/dokument/LTI/forskrift/2005-05-02-406>> accessed 15 September 2015.

432. In Norwegian, *Miljødirektoratet*. See at <www.miljodirektoratet.no> accessed 15 September 2015.

and electrical machinery – which included both large and small household appliances, medical equipment, cables and flexes, fluorescent lamps, and information and telecommunication equipment. Moreover, not only households WEEE are covered, but all types of electronics and machinery, a policy choice that evidences national responsibility not only to proper collection and management of WEEE from households but also from business and industry.

Still, in order to increase its effectiveness and to incorporate the provisions of the 2002 EU directive, the Norwegian WEEE take-back system was modified by the 2004 Waste Regulations (No 930 2004-06-01). There were three major amendments⁴³³ in the Norwegian waste regulation concerning WEEE; Take-back companies handling WEEE from then on would need an approval from the Norwegian Pollution Control Authority to perform their activities; Producers and importers of EEE were obliged to become members of an approved waste company (one of the four existing take-back schemes for WEEE in Norway at that time); and a register should be established to provide an overview of all producers (a term which also includes importers) and create a database on EEE for reporting and statistics.

With the coming into force of the first directive and the duty to transpose it into the national legal framework, the Norwegian Environment Agency established the WEEE Register (*EE-registeret*) in July 2006. The Register of producers is owned by the Norwegian Pollution Control Authority and had its responsibilities specified on §1-22 of the Waste Regulations and it aims to collect, summarise and compile data on production, import and export of new EEE for statistics. Furthermore, the register controls the compliance of EEE manufacturers regarding membership on a take-back company, a producer obligation set on paragraph 1-10 of Chapter 1 of the Waste regulations and reports to the Norwegian Agency those who do not comply with their obligations.⁴³⁴ The Norwegian Pollution Control Authority (SFT) is a directorate under the Ministry for the Environment, with overall responsibility on

433. Elisabeth Román and others, 'WEEE Management System – Cases from Norway and Finland' in Herbert Reichl and others (eds.) *Electronics Goes Green 2008+Joint International Congress and Exhibition Merging Technology and Sustainable Development Proceedings* (Berlin, 7 – 10 September 2008) 795-803, 796

434. § 1-10. Requirement regarding membership in a take-back company. The producer shall finance the collection, sorting, reuse, recycling, disposal and other treatment of EE waste through membership in a certified, collectively or individually financed take-back company, cf. section 1-13. Membership entails that the producer enters into an agreement for the purchase of services from a certified take-back company or that the producer itself operates a certified take-back company. The membership shall cover the categories of EE waste that the producer imports into or manufactures in Norway. The Ministry of Climate and Environment or the agency authorised by the Ministry of Climate and Environment lays down the categories of EE equipment in appendix 1 to this chapter. The obligation to be a member of a certified take-back company applies to producers of both components and independent products that are EE equipment. If the components that are EE equipment are incorporated in an assembled EE product, the take-back company shall overall ensure that the obligations associated with the whole EE equipment are fulfilled.

WEEE, as well as RoHS, matters. This authority is responsible for certifying companies wishing to join take-back schemes.

Importers and producers in Norway are obliged to be a member of a return scheme for EEE waste approved by the Environmental Agency. They pay a fee to the scheme they belong to, which is calculated according to their production or import. From the three initial schemes in 1999 currently, they have grown to five: *Elretur AS*, *Elsirk AS*, *ERP Norge AS*, *RENAS AS*, and *Eurovironment AS*. According to the Waste Regulation, the take-back schemes must ensure the free collection from enterprises, distributors and municipalities collecting WEEE, besides being obliged to accept WEEE in equivalent geographical areas of Norway where the members of the take-back scheme is located. In the case of retailer of EEE, after the implementation of the WEEE recast Directive it became mandatory for them to accept such end-of-life products. A final possibility of proper discard of WEEE available in the country is to submit it to one of the municipal collection sites.

8.4.3 Evaluation of the Norwegian performance

The Norwegian regulations for WEEE already in place before the first WEEE Directive – Regulations relating to the recycling of waste Chapter 1⁴³⁵ – established a national WEEE system with a reach beyond the provisions of the first WEEE Directive. This allowed for better performance in collection and recycling of WEE when taking into account the targets expected to be reached by each of the European countries to which the Directive applies.

Gathering information on the national WEEE take-back system in Norway had been worked out systematically from municipalities and waste companies during over a decade. During this period, the improvement of upstream systems for WEEE was a priority.

So far, the greatest concerns from the Norwegian environmental authorities for improvement have been, mainly, towards the following three topics: the remaining existence of ‘free-riders’, collection instabilities and distance from treatment companies to other areas than Oslo, a problem that leads to higher costs of transportation and increased levels of pollution.

Nonetheless, the most important changes brought by the recast directive were that in addition to take-back schemes, processors also were expected to be monitored (targets and reporting). Moreover, exporting of used EE-products, as well as online sales of EEE across the country’s borders would have to be reported. Finally, large suppliers were obliged to accept all kinds of small electronic devices as e-waste. The Norwegian Environment Directorate perceived the provisions brought by the recast directive as representing

435. Norway, FOR 2004-06-01 No 930: Forskrift om gjenvinning og behandling av avfall (avfallsforskriften) <<https://lovdata.no/dokument/SF/forskrift/2004-06-01-930>> accessed 16 September 2015.

a rather small change in the Norwegian system, although conversely it did cause the EU system to become more similar to the already established Norwegian WEEE system.

8.5 Sweden

8.5.1 Legislative implementation of WEEE Directives in Sweden

Sweden has a history of strong commitment to environmental protection initiatives and policies, with great focus on the waste management issue. The early sixties and the political debates that followed the publication of the American debate book ‘*Silent Spring*’⁴³⁶ provoked an important shift of the Swedish environmental awareness and resulted in the establishment of the Swedish Environmental Protection Agency in 1967. The growing concern that beyond preserving nature a focus on the negative impact of the industrial development should be observed resulted in the come into force of the first Environment Protection Act in 1969 imposing extensive environmental obligations on new waste treatment facilities.

In the 1990s, many other regulations came into force, and within this process, a growing importance for producer responsibility and a concentrated effort on measures to reduce the landfilling of waste took place. The Environmental Protection Act was then replaced by the Environmental Code, which was adopted in 1998 and entered into force 1 January 1999. The rules contained in 15 different acts were amalgamated in the Code with the purpose of creating an umbrella of legislation governing all environmental impacts within the framework of sound sustainable development for Sweden.

The fundamental environmental rules were the only ones included in the Environmental Code while the provisions that regulate more detailed matters are supposed to be laid down in ordinances made by the Government. In that sense, the Environmental Code brought on its Chapter 15⁴³⁷ provisions to regulate ‘Waste and producer responsibility’, were the concepts of ‘waste’, ‘household waste’, ‘waste management’, and ‘producer’ were defined along with ‘producer responsibility’ and the ‘municipal waste collection and disposal obligation’. Interesting to note the reference to ‘producer responsibility’ on Section 6 of this chapter where it can be observed that producer responsi-

436. RL Carson, *Silent spring* (Houghton Mifflin 1992). In the nineties, the book has been credited as the beginning of the modern environmental movement. It argues that nature modifies and adjusts in response to scientific control and the balance of nature is critical to the survival of humanity. The author illustrates how culture and nature are harmfully linked to the capitalist dynamics and calls for a change to an educated, environmentally-oriented science and public consumption.

437. Sweden, Environmental Code [1998:808] [Ds 2000:61] Ministry of the Environment and Energy Sweden (1999) Part 3 Special provisions concerning certain activities <www.government.se/legal-documents/2000/08/ds-200061/> accessed 7 August 2015.

bility used as a waste management policy to reduce landfilling of products and increasing recycling and reuse was adopted in Sweden before OECD's manuals or EU Directives.⁴³⁸ According to Section 6, 'producer responsibility' is defined as:

The Government or the authority appointed by the Government may issue rules concerning the duty of producers to ensure that waste is collected, removed, recycled, reused or removed in a manner that satisfies the requirements for acceptable waste management in terms of health and the environment. Such rules may be issued with respect to waste from the articles or packaging manufactured, imported into Sweden or sold by the producers and to waste generated by their activities.⁴³⁹

Not only preceding use of producer responsibility on the environmental code, Sweden already had specific Regulations and General Guidelines on commercial pre-treatment of electrical and electronic waste from 2001 (NFS 2001:8) as well as Handbook 2001:7 waste from electrical and electronic products. The handbook contained general guidelines on Swedish EPA Regulations on commercial pre-treatment of electrical and electronic waste.

The EU Directive on Waste Electrical and Electronic Equipment was transposed into Swedish law by the Ministry of Sustainable Development, having the Swedish Environmental Protection Agency (EPA) as the public body assigned for its enforcement. Ordinance 2005:209 on producer responsibility for electrical and electronic products covered both WEEE Directive and RoHS framework. The WEEE Ordinance⁴⁴⁰ approaches the topic of producer responsibility for EEE with emphasis on product design.

On 18 December 2003 the Swedish government instructed the Environmental Protection Agency to draw up a national waste plan. The national Waste Plan entitled 'A Strategy for Sustainable Waste Management' was issued in 2005 and defined the future direction of waste management and established specific targets to be met by 2010. The targets were based on the Swedish Environmental Objectives and enacted by the government in the

438. OECD's work on extended producer responsibility began in 1994 when studying the experience of a few European countries. In 2001 a Guidance Manual for Governments on Extended Producer Responsibility was published, in which EPR is defined as 'an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle'. Concerning European Directives, the first one to adopt the principle of EPR was the WEEE Directive 2002/96/EC. In Sweden, producer responsibility has been part of the legislation ever since 1994, when Ordinance 1994:1205 was issued for recycled paper.

439. Sweden, Environmental Code. Part Three Special provisions concerning certain activities, Chapter 15 Section 6 (Ds 2000:61) <www.government.se/legal-documents/2000/08/ds-200061/> accessed 12 August 2015.

440. Swedish Ministry of the Environment and Energy, Ordinance on producer responsibility for electrical and electronic products, Swedish Code of Statutes 2005:209.

same year.⁴⁴¹ According to the schedule proposed by the Swedish EPA's discussions for a renewal of the plan took place by the end of 2010, when new national waste statistics and revised environmental objectives would be available.

In 2011, the management of electronic waste in Sweden became primarily governed by the rules of the Waste Ordinance (2011: 927). Consumers were assigned with the obligation to sort out electronic waste and manage it separately from other waste. The current waste plan 'From waste management to resource efficiency' was adopted by the Swedish Environmental Protection Agency on 16 May 2012 for the period of 2012 – 2017.⁴⁴²

The recast of the WEEE Directive was transposed to national laws in 28 August 2014 (2014: 1075) bringing new provisions on producers' responsibility concerning waste electrical and electronic equipment and came into force on 15 October 2014. A major purpose of the amended Directive was to facilitate the take-back by consumers of electronics. As means to achieve this purpose, new strategies were introduced; for instance, shops that sell electrical equipment were assigned with the obligation to accept electronic waste even if no purchase took place. The regulation also approached the matter that more electrical equipment should be covered by the producer and that recovery targets should be raised.

8.5.2 The Swedish WEEE System

The Swedish waste management system finds its basis in the municipal refuse collection obligation as established in Swedish law, and on the objectives and hierarchy of the European Union of prevention, preparation for reuse, recycling, other use, (especially energetic one) and disposal, respectively.⁴⁴³ Swedish waste management is characterised by a clear division of responsibilities for all involved actors.

Municipalities are of central relevance to the system and even though they have the obligation to prepare individual waste plans since 1991, they also have autonomous position towards the producers, guaranteed in the Swedish constitution. The waste management work for households designed by each of the 290 municipalities bears the responsibility of collecting and disposing

441. Leonidas Milios, 'Municipal waste management in Sweden' in EEA, Managing municipal solid waste - a review of achievements in 32 European countries report No 2/2013 (EEA 2013) 5.

442. Section 83 of the Waste Ordinance (SFS 2011:927) requires the Swedish Environmental Protection Agency to draw up a national waste plan to fulfil the requirements of Articles 28 and 30 of Directive 2008/98/EC (Waste Framework Directive). The Swedish Environmental Protection Agency has the duty to update the plan to keep it updated.

443. Cf. Avfall Sverige. Swedish Waste Management (2013) 6. In Analysis of European Best Practice Solutions for Logistics of WEEE: Covered Countries: Germany, Sweden and Scotland, ISW Institute for Structural Policy and Economic Development. Analysis of European Best Practice Solutions for Logistics of WEEE (2014) 35.

such waste, however, for the product categories covered by producer responsibility, the obligation is transferred to the latter. In Sweden, producer responsibility is in place for batteries, cars, electrical and electronic products, end-of-life packaging, recycled paper, and tires.

Further in the distribution of responsibilities, for the national WEEE management system, municipalities fund information and collection, while producers fund transports, treatment and recycling. Prior to introducing a new collection system, producers are required to consult the local authority in order to enable the producers' collection system coordinated with the municipal waste management. By means of this strategy, producers are directed to evaluate the specific local conditions of each municipality and to ensure a proper, easily accessible collection. Furthermore, municipalities are responsible for operational inspections of collection systems while the Swedish Environmental Protection Agency is responsible for inspection guidance.

The Swedish WEEE legislation defines a set of requirements for producers. One of the main ones is the obligation – since early 2006 – for producers to register and submit information to the EPA. Following the provisions from the WEEE Directive, the Swedish legislation says that producers must finance the collection, recovery and recycling of WEEE from households according to their own market share, as well as mark all new EEE put onto the Swedish market.

El-Kretsen and EÅF are the two collective systems currently existing in Sweden for collection and recycling of WEEE. El-Kretsen is a non-profit organisation established in 2001 as the outcome of an agreement signed by municipalities, county administrators (equivalent to governors) and a producers association.⁴⁴⁴ The organisation is owned by 21 business associations and the charges paid by the affiliated members – over than 2000 in 2011 among municipalities and businesses – are based on their own costs. Out of its 1000 recycling facilities in operation all around the national territory, approximately 300 are dedicated for the business sector. El-Kretsen has the autonomy to make contracts with municipalities for the management of household e-waste collection (B2C), and with other organisations for business collection (B2B).

The Swedish Association of Recycling Electronic Products (EÅF)⁴⁴⁵ was founded in 2007 by three producers of EEE as a non-profit organisation. This collection system is owned by manufacturers directly and has as a particularity an insurance scheme responsible for providing coverage for the future costs associated with collection for recycling activities. EÅF carries producer responsibility for large and small household appliances, IT and telecommunication equipment, consumer equipment, electrical and electronic tools, toys leisure and sports equipment as well as automatic dispensers and batteries. Beyond the main method of using its member's shops and warehouses as

444. Román (n 430) 514.

445. In Swedish, Elektronikåtervinning i Sverige Ekonomisk förening.

collection points, the association also relies on other collection points closer to consumers, spread across cities and neighbourhoods, where consumers hand in WEEE for free, irrespective of which producer had put that end-of-life EEE on the market. The existing cleaning house shared with El-Kretsen, enables a financial clearing procedure for equally sharing the costs of take back and recycling among all producers registered in the Swedish system.

Households have the obligation to separate and deposit waste at any of the many collection points made available – approximately 1000 collection points around the country – and maintained by the municipalities, and for complying with municipal waste management regulations. At the same time, municipalities are the ones responsible for instructing households of the need to separate waste from electric and electronic equipment, and informing all of the collection and recycling results, which must be provided by the producers.⁴⁴⁶

8.5.3 Evaluation of the Swedish performance

The committee expresses as its official view that Sweden has a well-developed system of producer responsibility for electrical and electronic products and batteries.⁴⁴⁷ The supply chains of WEEE are open-looped, which means that municipalities, private service providers as well as other organisations are responsible for the reverse flow of WEEE with no involvement of EEE producers.

In 2012 more than 17 kg of WEEE per capita were gathered in Sweden, when the 2002 WEEE Directive had established a minimum of 4 kg per capita. The high amounts of WEEE per inhabitant collected annually, along with reduced costs are the two main reasons why the Swedish system is recognized as one of the most effective WEEE recovery systems in the world.

Studies over the Swedish WEEE collecting system stress the achievement of great effectiveness as a result from the strategy to own the total WEEE recycling flow in the country in only two national rake-back systems. Under this model, the service organisation has been able to offer cost-effective solutions and improved transportation from collection points to treatment plants.⁴⁴⁸ Another relevant factor is the high figures of supply of WEEE. This

446. Elretur, 'Sweden – World leader in WEEE collection and treatment' (2010)

<www.avfallsverige.se/fileadmin/uploads/elretur_eng.pdf> accessed 15 August 2015.

447. Swedish Environment and Agriculture Committee, 'Report on Waste and Recycling' [this author's translation] Miljö- och jordbruksutskottets, 'Betänkande 2014/15: MJU8 Avfall och kretslopp' 14 <www.riksdagen.se/sv/Dokument-Lagar/Utskottens-dokument/Betankanden/Avfall-och-kretslopp_H201MJU8/> accessed 12 August 2015.

448. Ulla Lehtinen and others, 'Examining the WEEE recovery supply chain: Empirical evidence from Sweden and Finland' in *Proceedings of the 21st Annual NOFOMA Conference* (Jönköping, 11 – 12 June 2009) 527.

characteristic, added to a long tradition of awareness of recycling, ensures convergent flows.

8.6 Conclusions

The purpose of this chapter was to provide an overview of the WEEE systems currently set-up in the Nordic countries. Transposition and implementation of the WEEE Directive in Denmark, Finland, Norway, and Sweden, as well as an observation of previously existing regulations for WEEE management and, therefore, pre-existing infra-structures were also taken into consideration to evaluate the differing aspects that the Nordic WEEE systems present.

Certainly, the existence of a WEEE system prior to the come into force of the WEEE Directives added to the fact that due to the similarities brought by the new European legislation no greater changes were made necessary represented an advantage to Denmark, Norway and Sweden. The clearer the roles and responsibilities to all actors, and, as importantly, the more balanced those responsibilities are distributed, the better the cooperation of those actors have proven to be.

A relevant strategy has been noticed to be the concern of making consumers aware and, therefore, fully committed to the take-back of WEEE. Within concerns of WEEE flows, free-riders, illegal exports, another topic proves equally important: engaging consumers on disposing correctly of their end-of-life WEEE, as even very well-structured WEEE take-back systems are prevented from achieving higher percentages of collection and treatment once this variable is not working accordingly.

Nonetheless, there are areas which still leave room for improvement. For instance, the need to create better conditions on collection so that reuse and refurbishment of end-of-life EEE is possible. As it can be learned from the study of this chapter, in most of the countries observed the conditions of collection, storage, and transport of WEEE do not involve any testing or separation of potentially reusable units. When those reach the treatment facilities, the stages of storage and transport most certainly ensured that no reuse would be possible.

Bearing in mind that transportation contributes not only to the increase of costs of the whole take-back system of WEEE but also to create a considerable environmental load, the distances still existing between the collected WEEE and the treatment companies are a problem to be solved. This is an area strongly referred to as lacking in improvement and a critical issue, for instance, in Norway and Finland.

PART IV

Brazil

Brazilian Structures and Legal Framework on Solid Waste

9.1 Introduction

In the previous chapters, this research has thoroughly observed and analysed the European WEEE Directives, and the national laws that have transposed them in France, the Netherlands, the United Kingdom and some of the Nordic Countries. Having these findings in mind, and in order to work further on legal transplant possibilities of concepts, policy decisions, and instruments used by those Directives to contribute to the Brazilian process, chapter 9 and chapter 10 have been developed.

This chapter in particular introduces and discusses the main legal structures of the Brazilian Federal Republic, the national scenario concerning waste production and collection, its evolution in figures, and the current issues. The chapter also presents and explains, as a main focus, the legal framework that has been developed to tackle the waste management problem. This knowledge is essential to understand the structure in which the creation and implementation of the National Policy on Solid Waste (Federal Law No 12.305/2010), and the State and Municipal Policies are inserted (each of them regulated by State and Municipal Laws, accordingly). The Federal Law No 12.305/2010 and the developments of Brazilian regulations more specifically for WEEE management will be analysed in the next chapter.

9.2 Brazil: Executive and Legal Powers of a Democratic Federation

First of all, it is relevant to mention that the Federalism in Brazil has been established by influence of a very unique background, different from what one would find in other federal states around the world. According to a brief explanation elaborated by Marcus Faro De Castro and Gilberto Marcos Antonio Rodrigues:

The Brazilian federation developed from historical roots immersed in the experience of colonization by the Portuguese. A tradition of delegating power to territorial administrators who became colonial bosses exercising arbitrary and virtually unaccountable authority, and determined to extract riches from the new land, was part and parcel of the style of this colonization. And it became a political legacy that was passed on to the institutions of the Brazilian polity

once it became independent from Portugal in 1822. The adoption of the first republican *and federal* constitution in 1891 only carried into the twentieth century the political legacy of the exertion of arbitrary power by local oligarchs who cling to their claim of exclusive territorial jurisdiction.⁴⁴⁹

After the first republican and federal constitution of 1822 there were several others, each of those, received important modifications that followed the political, social and economic context of Brazil throughout the decades. In 1988, after the end of a series of military governments (1964 – 1985) during the presidency of José Sarney, to erase the tracks of the military regimes, the constitution currently in force was enacted. It was so called ‘citizen constitution’ for it emphasised the protection of human and social rights.⁴⁵⁰ Under the 1988 Constitution,⁴⁵¹ the main feature of the present federal system could be characterised as the ‘three-tiered federation’ because, formally at least, it allocates partially overlapping powers among the Union (national government), the states, and the municipalities, endowing each with considerable authority for policy-making.

When it comes to legislating on policy areas such as civil, commercial, labour, and criminal law, electoral law, aviation, land reform, water, energy, information technology, radio and television broadcasting, postal service, indigenous peoples, monetary policy, and social security, Article 22 of the 1988 Constitution assigns the Union with ‘exclusive jurisdiction’. At the same time Article 18 declares that the Union, the States, the Federal District and the municipalities are ‘all autonomous’. Further, Article 23 grants the Union, the States, the Federal District and the municipalities ‘joint jurisdiction’ to act in a wide range of policy areas, for example environmental protection, home construction, housing policy, and sewage management, registry and handling of licenses for mining and water management, and more. Article 24 then assigns the three spheres of government ‘concurring jurisdiction’ to legislate on a variety of subjects, including: urban planning, forestry and fisheries, environmental protection. This is supplemented by Article 24, paragraphs 1-4, according to which, with respect to concurring legislation, the power of the national government ‘shall be limited to the establishment of general rules’, a power that does not exclude ‘supplementary jurisdiction of states to enact laws on the same subject matters covered by federal statutes. Finally, Article 30 states the jurisdiction given to municipalities. Municipalities, therefore, have the power to, among other things, legislate on topics of

449. Marcus Faro De Castro and Gilberto Marcos Antonio Rodrigues, ‘Brazil’ in John Kincaid, Luis Moreno and César Colino (eds.) *Diversity and Unity in Federal Countries: A Global Dialogue on Federalism* (McGill-Queen’s University Press 2010) 99.

450. See Paulo Bonavides, ‘Capítulo 11 – O Estado Brasileiro e a Constituição de 1988’ in *Curso de direito constitucional* (Malheiros 2012) 373–403.

451. Brazil, *Constituição da República Federativa do Brasil* (Senado 1988).

local interest and to supplement federal and state legislation when necessary. The differences in jurisdictions of the federative model adopted in Brazil bring limits to the joint action of the Union, States, Federal District and Municipalities, and aim at achieving a national homogeneity, with preservation of local and regional pluralism.

The Brazilian legal system has its bases on the Civil Law tradition, more specifically, on the Portuguese, French, Italian, and German Civil law. The current Federal Constitution has been in force since 5 October 1988 and stands as the highest law existing in the country. The 1988 Constitution organises the country as a Federative Republic formed by the 'indissoluble' union of the states, municipalities and the Federal District. There are 26 federate states and each of them is empowered to adopt their state constitution and laws. Nonetheless, the states have limited autonomy, according to principles defined in the Constitution. The municipalities also enjoy a restricted autonomy since their legislation must follow the dictates not only from the Federal Constitution, but also from the Constitution of the state to which they belong to. The Federal District is a blend of functions of federate states and municipalities, and its regulation is equivalent to a state Constitution, although named differently (Organic Law). The Federal District must also respect the terms of the Federal Constitution.

The Union, as defined by the Constitution, is formed by the three independent powers: the Executive, the Legislative, and the Judiciary. The head of the Executive power is the President of the Republic, who is elected by direct elections. The President is both the Chief of State and the Head of Government. The Legislative is represented by the National Congress, which is composed by the Chamber of Deputies ('lower house', with a proportional representation of the people of each state) and the Federal Senate ('upper house', where each State and the Federal District has a representation of three senators). Those are formed by representatives also elected through direct election. The Judicial power comprises the Federal Supreme Court, the Superior Court of Justice, the Regional Federal Courts, the Federal Judges, and the specialised courts (for labour, military, and electoral disputes).

When the legislative process of a federal law⁴⁵² is observed, in general terms, it starts with a bill of law in any of the Congress Houses, which will be defined as the Originating House. When the bill is voted there are two possibilities: it can be either rejected or forwarded to the other House. If forwarded to the other house, which will be nominated as the Reviewing House, it could be rejected, approved or amended. In the last option, the bill will be returned

452. In Portuguese, Ordinary Laws (*Leis Ordinárias*) and Supplementary Laws (*Leis Complementares*). Both are predicted on Article 59 (II)(III) of 1988 Constitution. They differ in quorum of approval and matter. Complementary Laws are adopted by an absolute majority (Article 69) and are only required in case of specific matters established on the Constitution. Ordinary Laws adopted by a simple majority (Article 47) and is used for all matters that are not specified as required to be regulated by supplementary law.

to the Originating House. After the bill is approved by the legislative it must be sent for the chief of the executive power (the president) who has the power to veto or sanction. Depending on the topic approached, it can be sanctioned or receive a veto either partially or totally. The veto can be sustained only in case where the argument is supported on one of the following points: 1) the submitted bill is contrary to the public interest or 2) the bill is unconstitutional.

9.3 A Panorama of Urban Solid Residues in Brazil

9.3.1 Geography and Statistics

As it has happened in most developing countries Brazil experienced an accelerated urbanisation process only in the second half of the twentieth century. The vast urban expansion in the country – a key component of the structural changes in Brazilian society – was mostly due to the process of industrialisation for the first time, in the 1960s, the urban population reached higher figures than rural.⁴⁵³ Performed once in every decade, the population census of 2010 evidenced that the Brazilian urban population stands for 84,4% of the total population. Within the urbanisation process, another area worth mentioning is that of the role of Southeast region. The Southeast region was the first to urbanise in the late 50s and it is important to bear in mind that the Brazilian territory did not experience urbanisation in an equal way. A combination of factors contributed to the urban process in Southeast region: concentration of industries in the region, the political and administrative centre of the country was located in Rio de Janeiro at that time, and Minas Gerais was the basis of the national economy (highly productive and rich mines in the region). From the 70s until this date, São Paulo and Rio de Janeiro alone have the highest rates of concentrated urban population: while in the 70s almost 30% of the urban population in the country lived in these cities, still in 2010 it has been estimated that they represent around 10% of all Brazilian urban population.⁴⁵⁴

The growth of Brazilian cities was not accompanied by the provision of infrastructure and urban services, such as public services of sanitation involving the supply of drinking water and the collection and treatment of sewage as well as a framework and a management system for urban drainage and solid residues.⁴⁵⁵ Therefore, such a fast and considerable growth of the urban

453. Data obtained from the 1960's population census performed by IBGE.

454. IBGE, Atlas do Censo Demográfico 2010 (2013)

<<http://censo2010.ibge.gov.br/apps/atlas/>> accessed 16 October 2014.

455. The urban agglomerations and the 49 cities that have more than 350,000 inhabitants are home to 50% of Brazilians that live in urban situation. Those represent, approximately, 65% of the Gross Domestic Product (GDP). On the other extreme are 4,295 municipalities with less than 25,000 inhabitants, which account for 12.9% of the Brazilian GDP.

areas caused a huge deficit in the service of urban sanitation and solid residues management, which became one of the leading Brazilian environmental problems of nowadays.⁴⁵⁶ In Brazil, along with the migrations to the cities, as a pressure factor on the natural resources, consumption and waste production, there was the rise of the wealthy of the middle class. If considered the figures informed by the Secretariat of Strategic Planning of the Republic in 2002 only 38% of the population were classified as middle class but in 2012 this number increased to 53%. This means that the Brazilian middle class is represented by 37 million more people than 10 years ago. Although this increase represents a clear improvement of the life quality of such individuals, it also indicates a much higher level of production, consumption and waste production.⁴⁵⁷

The cities are still growing – economically and spatially – and so is the waste generation rate *per capita*, at an even higher rate: the generation of waste in Brazil has advanced five times more if compared to population growth from 2010 to 2014. At the same time, 38% of the population (or 78 million people) still lack access to treatment and proper disposal of waste services.⁴⁵⁸ Adding to the increasing rates, the practice of improper disposal causes serious and harmful consequences to public health as well as to the environment, especially when a large number of socially excluded families surviving from the open dumps – where they retreat the recyclable materials to sell – is a very common image in Brazil. The existence of waste pickers (*catadores*) is a national peculiarity, directly connected to the socioeconomic status of many families, and improper waste disposal conditions that only recently has received attention from the federal laws regulating waste and correlating matters. An overview of population growth in urban areas, per region, might help to see the picture.

456. Brazilian Ministry of the Environment (MMA), Secretaria de Recursos Hídricos e Ambiente Urbano - SRHU/MMA, Guia para elaboração dos Planos de Gestão de Resíduos Sólidos. Brasília (DF), 2011

<www.cidadessustentaveis.org.br/sites/default/files/arquivos/guia_elaboracao_planos_gestao_residuos_solidos_mma.pdf> accessed 17 October 2013.

457. Brazil, Secretaria de Assuntos Estratégicos da Presidência da República, Vozes da Nova Classe Média 4º Caderno <www.sae.gov.br/site/?p=17901#ixzz2j28Aep5e> accessed 28 October 2013.

458. ABRELPE, 'Panorama dos Resíduos Sólidos no Brasil 2014' (2015) 38-41. Since the first report issued in 2003, it has been observed that waste production rates are considerably higher than the rates for population growth. More can be found in the reports at <www.abrelpe.org.br/panorama_edicoes.cfm> accessed 5 February 2015.

Table 9.1 Percentage of Urban Population per geographical Region in Brazil (1970 – 2010)

Regions	Urban Population				
	Percentage (%)				
	1970	1980	1991	2000	2010
Brazil	55,9	67,6	75,6	81,2	84,4
Central-West	48,1	67,8	81,3	86,7	88,8
Northeast	41,8	50,5	60,7	69,1	73,1
North	45,1	51,6	59,0	69,9	73,5
Southeast	72,7	82,8	88,0	90,5	92,9
South	44,3	62,4	74,1	80,9	84,9

In 1988, with the enactment of the Constitution, the municipality became an autonomous federal entity, endowed with its own powers, administrative, legislative and financial, in particular, with the power to legislate on matters of local interest; to add to federal and state legislation and also to organise and provide, directly or by concession or permission, public services of local interest in essential character (Article 30 items I, II and V), giving rise to the interpretation that the municipality is therefore, the holder of the ownership of all management of urban cleaning services and solid waste, from collection to final destination.

The division of Brazil's twenty-six Federal States and Federal District⁴⁵⁹ into five regions⁴⁶⁰ is a convention created by the Brazilian Institute of Geog-

459. In Portuguese, *Distrito Federal (DF)*. Federal District is the name given to one of the 27 administrative regions that comprise the Federative Republic of Brazil. The peculiarity of the smallest administrative entity of the Union is to provide shelter to the capital of the Federation, the city of Brasília. The first capital of Brazil, Salvador and Rio de Janeiro, had as a fundamental characteristic the fact of being coastal cities, a fact explained by the model of occupation and exploration undertaken by the Portuguese. The Constitution of 1891 provided for the transfer of capital to the Central Plateau region with the aim of increasing national integration, and this was ratified by 1934 Constitution and finally determined by the Constitution of 1946. The project was only accomplished during the government of President Juscelino Kubitschek, on April 21, 1960. See more at <www.df.gov.br/apoio-ao-servidor/cartilha-do-servidor/doc_download/149-breve-historia-do-distrito-federal-.html> accessed 20 October 2013.

460. The Brazilian Regions are groupings of units of the federation with the purpose of helping statistical interpretations, deployment of management systems of public functions of common interest or guiding the implementation of public policies of the federal and state levels. Currently, there are five official regions: Central-West, Northeast, North, Southeast and South. The first proposal of regional division in Brazil came in 1913, which has been altered until its current structure since 1970 (and included in the Federal Constitution currently in force, the 1988 Constitution). Wagner De Cerqueria Francisco, 'Divisão Regional Brasileira' Brasil Escola <www.brasilecola.com/brasil/divisao-regional-brasileira.htm> accessed 3 November 2013.

raphy and Statistics (IBGE)⁴⁶¹ in order to bring together states with common physical, economic and social traits. Considering the particularities of the five regions and the amount of solid residues produced, it could be no different to notice the existence of great contrasting figures, especially once percentages of solid waste originated by each of them are observed. The regions and their respective percentage to the amount of waste produced in Brazil, as reported by the Brazilian Association of Public Cleaning Companies and Special Waste (ABRELPE)⁴⁶² are presented below.⁴⁶³

Table 9.2 Percentage of Participation in Collection per Region in Brazil (2012 – 2014)

Region	Participation in the Amount of Waste Collected		
	2012	2013	2014
Central-West	8,1%	8,2%	8,1%
Northeast	22,1%	22,1%	22,2%
North	6,4%	6,4%	6,4%
Southeast	52,5%	52,4%	52,5%
South	10,9%	10,9%	10,8%

Keeping in mind the enactment of the National Policy Law on Solid Waste in 2010 and the rising levels of waste production, it is relevant to observe evolution on separate collection. As shown in the next figures, a sample of the increase of separate collection initiatives set up by the municipalities between 2012 and 2014, as reported by ABRELPE.⁴⁶⁴

461. In Portuguese, *Instituto Brasileiro de Geografia e Estatística (IBGE)*. The Brazilian Institute of Geography and Statistics is the main provider of data and information about the country. Such information meets the demands of several types of segments of civil society, as well as the bodies at the federal, state and municipal level. See more at <www.ibge.gov.br>.

462. In Portuguese, *Associação Brasileira das Empresas de Limpeza Pública e Resíduos Especiais (ABRELPE)*. ABRELPE is an association with the purpose of creating, developing and strengthening the market of solid waste management, in collaboration with public and private sectors, in the pursuit of proper conditions for the companies to perform. It promotes exchange of information, and yearly publishes the ‘Panorama of Solid Waste in Brazil’ publication, aiming at providing subsidies for decision-making in the industry, among other objectives, as well as of experiences intended to develop the solid waste industry. The publications have been one of the main sources of this work for obtaining current and structured data on production and management of waste in Brazil. In the international scenario, ABRELPE is the Brazilian representative of the International Solid Waste Association (ISWA). See more at <www.abrelpe.org.br>.

463. ABRELPE, ‘Panorama dos Resíduos Sólidos no Brasil 2012’ (2013), ‘Panorama dos Resíduos Sólidos no Brasil 2013’ (2014) and ‘Panorama dos Resíduos Sólidos no Brasil 2014’ (2015) <www.abrelpe.org.br> accessed 4 January 2016.

464. *ibidem*.

Table 9.3 Percentage of Initiatives of Separate Collection per Region in Brazil (2012 – 2014)

Region	Initiatives of Separate Collection Set up by Municipalities*		
	2012	2013	2014
Central-West	31,8%	33,8%	37,5%
Northeast	37,8%	40,4%	42,8%
North	47,4%	49,5%	53,1%
Southeast	80,5%	82,6%	85%
South	79,5%	81,9%	84,7%

* Percentage of the sample of municipalities chose for this study, per region.

While the number of municipalities presenting efforts for separate collection initiatives is significant, it should be noted that often these activities boil down to the availability of voluntary delivery points or agreements with recycling cooperatives, which do not cover the whole territory or the local population.

In order to seek for a parameter, waste production and waste collection levels should be observed. It goes without saying that production of urban solid waste present higher figures than ones for collected waste for the simple reason that collection does not equate the total of waste produced. According to ABRELPE:

The waste production in Brazil increased 2.9% from 2013 to 2014, a rate higher than the rate of urban population growth in the country in the same period, which was 0.9%. (...). The comparison between the total amount of urban solid residues produced and collected in 2014 indicates that the country had a 90.6% collection coverage which leads to the conclusion that just over 7 million tonnes of urban solid residues were not collected that year and, as a consequence, were not properly disposed.⁴⁶⁵

Table 9.4 Percentage of Increase of Waste Production and Waste Collection in the Country (2011 – 2014)

Category	Percentage of Increase compared to the Previous Year		
	2011-2012	2012-2013	2013-2014
Waste Production	1,3%	4,1%	2,9%
Waste Collection	1,9%	4,4%	3,2%

465. ABRELPE, 'Panorama dos Resíduos Sólidos no Brasil 2014' (2015) 29
<www.abrelpe.org.br/panorama_edicoes.cfm> accessed 10 January 2016.

Still according to ABRELPE's report issued in 2015, the figures referring to the final destination of the Urban Solid Waste in the country in 2014 and their comparison with previous years are presented on the next table. In this sense, it is imperative to stress that 41.6% of the urban solid waste collected – corresponding to 81,000 tonnes per day – is sent to dumps or controlled landfills. Controlled Landfills slightly differ from open dumps, since both do not have the set of systems and measures needed to protect the environment from damage and decay.⁴⁶⁶

Table 9.5 Percentage of Urban Solid Waste according to Final Destination (2012 – 2014)

Destination	Percentage of Urban Solid Waste per Final Destination		
	2012	2013	2014
Sanitary Landfills	58%	58,3%	58,4%
Controlled Landfills	24,2%	24,3%	24,2%
Open Dumps	17,8%	17,4%	17,4%

All in all, the figures concerning the waste production in the country are worrisome due to the significant increase of the amount of urban solid waste produced in total and per capita. It is visible that a new scenario is taking place: even though the population growth in urban areas has been decreasing, according to studies from ABRELPE, waste production keeps rising. If compared with the figures from previous reports the changes occurring in proper final destination of waste are in a much slower rate than the growth of waste production. Throughout the years the increase in proper destination of waste (destined to sanitary landfills) has been of 0,4% while the waste production levels are rising much more rapidly, in an average of 2,76% if considered the same period (2012-2014). Those figures are a clear evidence for the need of more policies, regulations and, above all, implementation of well-structured working systems.

Consolidated data on urban solid residues still is a struggle in Brazil. However, since a few years this scenario has been changing. In 2013, the study 'Reverse Logistics of Electrical and Electronic Equipment – Technical Feasibility and Economic Analysis' was developed both by the Department of Production Development of the Ministry of Development, Industry and Foreign Trade, and the Brazilian Agency for Industrial Development. The study presented an estimate for approximately 1,300 million tonnes of waste electrical and electronic equipment to be generated in Brazil by 2018. The survey also estimates that the 150 largest municipalities – mostly in the

466. *ibidem*.

Southeast and South Regions – are responsible for about two-thirds of all WEEE discarded in the country.⁴⁶⁷

Aware of the impact of waste problem in society and the environment, since 2007 the MMA⁴⁶⁸ has been signing agreements with the federal states to prepare the State Waste Management Plans and is supporting Waste Management Plans in municipalities, as well as Plans for Separate Collection. Nonetheless, but there have been a series of complications since then. The developments of agreements, regionalisation studies and waste management plans will be discussed further in this chapter.⁴⁶⁹

An additional issue is the difficulty the federal units and the municipalities have been facing to adequate to the new regulations. More specifically the National Policy on Solid Waste, established by the Federal Law No 12.305/2010 and Decree No 7.404/2010. The new policy defines the obligation of federal units and municipalities to elaborate plans to deal with solid residues or ‘waste plans’ without defining practical information of what is the content expected, what are the possibilities (especially concerning budget and structure). However the issues were numerous: the lack of experts on the topic, gaps in the specifications for such plans and, most frequently, the lack of political interest in the new and difficult issue that is re-use, recycling and proper collection of waste, as well as waste reduction. The NPSW will be approached in detail in the next chapter.

9.3.2 Waste Prevention, Waste Reduction and the Challenge of Eliminating Open Dumps

The abilities to monitor and measure the amounts of waste that are recycled, recovered or sent to landfills are only possible once collection of data on these procedures is thoroughly and continuously performed. This information is vital to allow for policy improvements, for instance, by providing figures for comparing different countries or regions, as well as different periods and strategy results. The industrial progresses on the value chain of products,

467. Brazilian Agency for Industrial Development (ABDI) and the Brazilian Ministry of Development, Industry and Foreign Trade (MDIC), ‘Logística Reversa de Equipamentos Eletrônicos: Análise de Viabilidade Técnica e Econômica’ (29 April 2013) 43 <www.abdi.com.br/Paginas/estudoNew.aspx> (keyword ‘sustainable production’) accessed 4 May 2014.

468. Brazilian Ministry of the Environment (MMA), Política Nacional de Resíduos Sólidos, Ações do MMA e Governo Federal (Secretaria de Recursos Hídricos e Ambiente Urbano abril 2013) <www.conferenciameioambiente.gov.br/wp-content/uploads/2013/04/A%C3%A7%C3%B5es-do-MMA-e-Governo-Federal-PNRS.pdf> accessed 22 October 2013.

469. Pedro Wilson Guimarães, ‘Resíduos sólidos: responsabilidade compartilhada no contexto de cidade sustentável: discussões acerca da 3ª Conferência Municipal do Meio Ambiente’ Diário da Manhã (Goiânia, 28 June 2013) <www.dm.com.br/texto/121919-resaduos-solidos-responsabilidade-compartilhada-no-contexto-de-cidade-sustentavel-discussaes-acerca-da-3a-conferencia-municipal-do-meio-ambiente> accessed 24 October 2013.

such as in reducing material wastage and promoting eco-design, are among the first actions contributing to reduction of waste of natural resources. Nonetheless, the reuse and recycling of end-of-life products must also be included in policies and promoted in practice, landfills should be the very last option, and waste prevention highly improved.

While reuse and recycling have clearly been included in the Brazilian environmental laws and policies, the case of waste prevention still lacks the same treatment and currently represents a great challenge. To prevent production of waste is preferred from recycling, recovering, reusing or reducing waste, whether qualitatively or quantitatively. However, taken to the strict sense, waste prevention is inexistence of waste, and policies, regulations, infrastructure and society's dynamics are not prepared to achieve zero waste yet.⁴⁷⁰ The impact of waste production on natural resources is vast and constantly increasing in Brazil. Given the high figures of waste production worldwide as a result of the great incentive for consumers to acquire more and new products, and the limited options – including technological possibilities – to avoid it from being produced, it is not viable for prevention and reduction policies to be developed separately.

Regarding waste management, it is essential the integration of public, private, and society in general in a way that includes seeking methods to reduce waste at the very beginning, before it even enters the waste stream. More especially, sustainable solid waste management presents as its main goal to offer a chance to prevent waste through designs based on the full life cycle of the product, somewhat similar to natural cycles. As described by Uyen Nguyen and Hans Schnitzer:

By this way, waste should, like any residue, be thought of as potential inputs for starting new processes. Waste materials that are generated must be recovered for reuse and recycling to reach the goal of 'using everything, nothing left'.⁴⁷¹

In its turn, relating to goals for waste prevention in Brazil, one that has been nationally established before the creation of the NPSW was set by the National Plan on Climate Change. The plan was one of the instruments of the

470. Maria Alexandra Aragão, 'A "compra responsável" e a prevenção de resíduos sólidos domésticos' in *6ª Conferência Nacional sobre a Qualidade do Ambiente – volume 1* (Universidade de Lisboa 1999) <<https://estudogeral.sib.uc.pt/jspui/bitstream/10316/15152/1/AlexandraAragao-compraresponsavelCNQA%20v2.pdf>> accessed 21 October 2013.

471. Uyen Nguyen Ngoc and Hans Schnitzer, 'Sustainable solutions for solid waste management in Southeast Asian countries' (2009) 29(6) *Waste Management* 1982-1995.

policy-Law enacted on Climate Change in 2009⁴⁷² and it referred to the achievement of a much higher waste recycling rate:

Furthermore, to reduce the pressure on natural resources and promote energy conservation, efforts should be made to increase the recycling of solid waste to 20% by the year 2015. The vision is to build on the successful experiences of Selective Collection Programme Household solid waste developed in some municipalities.⁴⁷³

As it will be explained in the next chapter, only in late 2010 – after 19 years through analysis and voting processes at the National Congress House – the National Policy on Solid Waste was enacted by Federal Law 12.305/2010 and regulated by Decree 7.404/2010. Such final approval represented a broad consensus involving all parts of the various cycles of solid waste production in Brazil, as well as government and civil society and new and clearer goals on this matter. Article 42 of the law the legislator has included as a first initiative the concern with prevention and reduction of waste from the productive process: '[t]he Public Authority may introduce inductive measures and credit lines to meet, on a priority basis, the following initiatives: I – *prevention* and reduction of solid waste generation in the productive process (...).'

Therefore, the institution of the National Policy on Solid Waste brought important tools to enable the necessary breakthrough in Brazil in addressing the major environmental, social and economic impacts of inadequate management of solid waste. Among its main goals is the prevention and reduction of waste generation, the support for practices of sustainable consumption patterns, and a set of tools to provide increased recycling and reuse of solid waste (those with economic value and can be recycled or reused) and environmentally sound disposal of waste (those that cannot be recycled or reused).

Among the first challenges of implementing the new law and achieving a successful waste management system is to reach proper standards of final destination of residues that could not be reused, recovered or recycled. In Brazil, the rapid growth of the urban areas and population numbers has led to irregular destinations of tonnes of waste a day. Places known as '*lixões*', or simply, open dumpsites, have been a part of the Brazilian waste scenario for decades and represent a source for diseases, environmental damage and at the same time, of income.

One of the base strategies of the NPSW is the eradication of open dumps and regulation of landfills to reach minimum standards of security for human

472. Brazil, Lei Nº 12.187, de 29 de dezembro de 2009. Establishing the National Policy on Climate Change and other measures, Diário Oficial da União, Brasília (DF), 30 de dezembro de 2009, 109.

473. Brazilian Ministry of the Environment (MMA), Plano Nacional Sobre Mudança do Clima, 80 <www.mma.gov.br/clima/politica-nacional-sobre-mudanca-do-clima/plano-nacional-sobre-mudanca-do-clima> accessed 22 October 2013.

health and the environment. Regardless of its high priority to the residues management system in Brazil, the full achievement of this goal remains far from completion. The problem concerns the development of all take-back systems once only with regulated landfills it is possible to properly control the residues destined to the final option of the residues disposal, which should have reuse, recycling, and recovery as preferred options. The existence of well-structured landfills is necessary for enabling a system where bans of certain materials can be applied and foster better recycling, reusing, and recovery methods and paths for end-of-life products that otherwise would have simply been buried underground.

The deadline for all municipalities (and States) to prepare and present their plans (*Planos de Gestão de Resíduos*) expired on 3 August 2014, after Article 54 of the NPSW specified a maximum period of four years from the publication of the Law for them to be prepared. In despite of the deadline and the vital importance of the plans to be prepared, according to the National Information System on Sanitation (SNIS),⁴⁷⁴ in 2013, Brazil still had 1,196 open air dumps, against only 652 landfills.

As argued by senator Fernando Bezerra Coelho in his speech supporting Senate's proposition for an amendment to the NPSW in order to postpone the deadline for the extinction of the open air dumps, it should be noted that the termination of an open air dump is a complex action, which must rely on other key actions as, for example, the construction of landfill for inert materials, the construction transshipment areas, sorting and treatment of residues from construction, building sorting centres and separation of recyclable materials, implementation of selective collection, educational campaigns for the separation of residues at source, among others.⁴⁷⁵

The first version of proposition to postpone the deadline in eight years by making an amendment to a provisional (MP) measure was presented by Deputy Manuel Júnior.⁴⁷⁶ The MP 649/2014⁴⁷⁷ referred to an amendment to the

474. Brazil, Secretaria Nacional de Saneamento Ambiental, Sistema Nacional de Informações sobre Saneamento: diagnóstico do manejo de resíduos sólidos urbanos – 2013 (MCIDADES.SNSA 2015).

475. Brazil, Senado Federal, Diário do Senado Federal N. 102. Item 11: Projeto de Lei do Senado N. 425, de 2014. Parecer N. 384, de 2015–PLEN, 2 de Julho de 2015, 282-283.

476. In Portuguese, *Medida provisória*. Provisional Measure is an instrument part of the Brazilian legal system. It can be only used by the Executive Power (the President) and is intended for matters that are considered of extreme importance or urgency. Such legal instrument is exclusively governed by Article 62 of the Federal Constitution in force, which determines: Article 62. In case of relevance and urgency, the President of the Republic may adopt provisional measures with the force of law and shall submit them immediately to the National Congress, which, being in recess, will be extraordinarily summoned to meet within five days. Sole paragraph. Provisional measures lose effectiveness from the date of issue onwards if not converted into law within thirty days from its publication, being the National Congress responsible for discipline the legal relations arising from these.

477. Brazil, Medida Provisória Nº 649 de 5 de junho de 2014. Alters Law No 12.741, of 8 of December of 2012 that provides for clarifying measures for the consumer regarding taxes

Law 12.741/2012 concerning clarification of measures to consumers regarding the tax burden on goods and services. By the end of the discussions in the Federal Senate, it was decided that the matter had too much relevance and concerned a topic that did not fully integrate the MP. Therefore, it should not be included at the amendment to MP 649/2014. As a consequence, the Federal Senate followed through a different procedure to obtain legislation that would approve an extension of the deadline. Hence, the Federal Senate has elaborated a bill, PLS 425/2014,⁴⁷⁸ in December 2014 as a result from the final (seventh) report of the Temporary Sub-commission for Solid Residues.

The same issues concerning time frame, complexity of actions, and lack of budget from public entities, as well as simple know-how, were present in the discussions that took place in the different sessions in the Federal Senate. Finally, this phase was concluded by the production of a final version of a bill to be revised by the Chamber of Deputies, according to the procedures established by the Federal Constitution. The bill PLS 425/2014 was sent to the Chamber of Deputies on 8 July, 2015.⁴⁷⁹ Currently, the bill PLS 425/2014, which has been received by the Chamber of Deputies as PL 2289/2015, is on the agenda waiting for discussion at the Commission for Environment and Sustainable Development (CMADS) of this chamber.

9.3.3 Incineration of Waste: brief comments

Keeping in mind the services for dealing with urban solid residues, while dumps with no control or appropriate treatment are methods walking towards extinction due to recent national regulations discussed further in this study. The debate about waste incineration has been quite a frequent one in such context. In fact, the main reason for the increase of such a debate is the combination of the reduction of landfills in cities, as a mean of eliminating solid residues, and the slow development of an integrated recycling and reuse system. Although there are national regulations for thermal treatment for residues in Brazil, still the population, the private sector and the public administration present strongly different opinions about the topic and if such meth-

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- on goods and services <www.planalto.gov.br/ccivil_03/_ato2011-2014/2014/MPV/mpv649.htm> accessed 9 November 2015. Senado Federal – Secretaria geral da mesa (CMMPV 649/2014). Ata da 2ª Reunião da comissão mista destinada a examinar e emitir parecer sobre a medida provisória No 649, de 2014, da 4ª Sessão legislativa ordinária da 54ª legislatura, realizada nos dias 5 e 6 de setembro de 2014.
478. Brazil, Senado Federal Subcomissão Temporária de Resíduos Sólidos. Projeto de Lei do Senado (PLS) N. 425, de 2014. Projeto apresentado como conclusão do Relatório Final nº 7, de 2014, da Subcomissão Temporária de Resíduos Sólidos em 18 de dezembro de 2014 <<http://www25.senado.leg.br/web/atividade/materias/-/materia/119536>> accessed 9 November 2014.
479. Brazil, Senado Federal, Ofício SF Nº 858 de 07/07/15 ao Senhor Primeiro-Secretário da Câmara dos Deputados, encaminhando o projeto para revisão, nos termos do art. 65 da Constituição Federal (fls. 263 a 265).

od for treating solid residues should be expanded because of its efficacy or eliminated due to the potential risks and real effects on the environment.⁴⁸⁰

In Brazil, the incineration of waste is mainly regulated by resolution 316/2002⁴⁸¹ of the National Council for the Environment (CONAMA).⁴⁸² The regulation determines the limits for emissions, and NBR 11175 of the Brazilian Association for Technical Rules (ABNT),⁴⁸³ which refers to the incineration of hazardous solid residues and standards of performance. Further, CONAMA's resolutions No 264/1999⁴⁸⁴ and No 358/2005⁴⁸⁵ add details to regulating the topic. More recently, in the 1st paragraph of Article 9 of Law 12.305 it is registered that 'technologies may be used aiming at energy recovery from municipal solid residues'. This paragraph has brought legal strength for proponents of incineration of solid residues to justify the deployment of incineration plants in the country.

The main critics argue that the process itself does not actually remove the waste but only turn tonnes of various materials into highly toxic gas and ashes which are difficult to eliminate and that the toxicity limit allowed to be tolerated is quite complicated to define and control. Also in the spotlight is the fact that Brazil ratified the Stockholm Convention – the treaty of the United Nations – in 2004.⁴⁸⁶ There it was acknowledged that incinerators are a major source of formation of dioxins and furans, one of the most toxic persistent and bio-accumulative organic pollutants produced by human. Ac-

480. For instance, see Maria Regina Mendes, Toshiya Aramaki and Keisuke Hanaki, 'Comparison of the environmental impact of incineration and landfilling in São Paulo City as determined by LCA' (2004) 41(1) *Resources, conservation and Recycling* 47-63. Where the environmental impact of landfilling is concluded to be much higher when compared to the environmental impact of incineration with ash disposal to a landfill site. Also, Nelson Gouveia and Rogério Ruscito do Prado, 'Análise espacial dos riscos à saúde associados à incineração de resíduos sólidos: avaliação preliminar' (2010) 13(1) *Revista Brasileira de Epidemiologia* 3-10, 8. The article includes studies indicating that incineration produces varying amounts of toxic substances, organic or inorganic, which are sent into the atmosphere.

481. Brazil, CONAMA, Resolução N° 316/2002. *Diário Oficial da União*, Brasília (DF), 20 de novembro de 2002, 92-95.

482. In Portuguese, *Conselho Nacional do Meio Ambiente (CONAMA)*. See more at <www.mma.gov.br/conama>.

483. In Portuguese, *Associação Brasileira de Normas Técnicas (ABNT)*. See more at <www.abnt.org.br> accessed 10 January 2014.

484. Brazil, CONAMA, Resolução N° 264/1999. Applies to the licensing of rotary kiln clinker production for co-processing of waste activities, except for the waste: gross household, health services, radioactive, explosive, organochlorines, pesticides or alike. *Diário Oficial da União*, Brasília (DF), 20 de março de 2000, 80-83.

485. Brazil, CONAMA, Resolução N° 358/2005. Provides for the treatment and disposal of waste from health services and other matters. *Diário Oficial da União*, Brasília (DF), 4 de maio de 2005, 63-65.

486. United Nations, 'Stockholm Convention on Persistent Organic Pollutants' 2256 UNTS 119, 40 ILM 532 (2001) Chapter XXVII - Environment <www.austlii.edu.au/au/other/dfat/treaties/notinforce/2001/7.html> accessed 13 December 2013.

according to the Convention, the use of incinerators is recommended to be phased out.

Another aspect frequently highlighted when discussing the use of incineration is time. The legal and technical procedures for an incineration project to start operating its activities take a considerable amount of years. The process starts on the licensing for installation and it will take approximately 10 years to be finished. Such a long process indicates how much Brazil is not yet prepared for using this technology as an option for the disposal of part of the solid urban residues collected. On the other hand, it is a fact that the incineration can transform waste to energy and reduce the amount of residues to 10% of their original weight and is seen as a final option – when reduction, reuse or recycling are not possible – to deal with waste by the Brazilian Ministry of Environment (MMA)⁴⁸⁷ and other institutions as well as researchers.⁴⁸⁸

The incineration of waste in Brazil, therefore, has for decades been traditionally limited to managing hospital waste in small amounts. Most plants were built based upon old technology, highly pollutant, which has led the national society to reject incineration of waste in any circumstances. Nonetheless, due to improvements in technology worldwide, changes in the legislator's perspective (NPSW), added to the rapidly growing amount of rejects against limited options for recovery, recycling, reuse and landfilling, the situation is changing. A brief observation of recent partnerships of municipalities with specialised companies has shown that the incineration process for the management of waste from households is being considered. Cities such as Brasília, Belo Horizonte, Porto Alegre and Rio de Janeiro.⁴⁸⁹

9.4 Legal Framework on the Environment

In terms of legal rules, environmental issues were neither included in the colonial, nor in the imperial or republican periods of the Federative Republic of Brazil. The 60's were characterised by the occasional and rare initiatives of the Government towards the environment, which were mostly focused on conservation of natural resources rather than preservation of all elements of the environment from all sorts of harm or damage.

487. In Portuguese, *Ministério do Meio Ambiente (MMA)*. See more at <www.mma.gov.br>.

488. Several studies have been elaborated and knowledge has been developed for the use of modern instruments, including the Company of Environmental Sanitation Technology connected with the Secretariat of the Environment of the Government of the State of São Paulo (*Companhia de Tecnologia de Saneamento Ambiental do Estado de São Paulo - CETESB*) and partnerships with the German government. Although authorised in Brazil, incineration is seen with precaution, as reported by the Brazilian Ministry of the Environment (MMA), 'Inventário Nacional de fontes e estimativa de emissões de dioxinas e furanos' (21 May 2013) 188 <www.mma.gov.br/publicacoes> accessed 8 March 2014.

489. Maurício Waldman, 'Lixo domiciliar brasileiro: modelos de gestão e impactos ambientais' (2013) 33(2) *Boletim Goiano de Geografia* 169-184, 177.

The development of the Brazilian Environmental Policy had its first mark with the Stockholm Conference in 1972. At the occasion, the Brazilian official representatives defended the argument that the best instrument to fight pollution was economic and social development. The intensive debates on the topic of sustainable development took place for the first time as an official central topic at the Conference in Stockholm. It was also in this event that for the first time the environmental issues and its planetary implications were considered as affecting life of all inhabitants in the globe, whether poor or rich. As a result of pressure from society as well as external actors who accused the Brazilian government of defending a development at any cost, the need to create a national environmental project that would contribute to reducing the environmental impacts of growth caused by a developmental policy was evident. In response to such pressures, the Special Secretariat of Environment⁴⁹⁰ was established under the Ministry of the Interior in 1973 aimed at environmental conservation and rational use of natural resources.

In the following years, the eco-development vision – which advocates the reconciliation of economic, social and environmental development – gained strength around the globe. Soon, Brazilian leaders observed that, due to national peculiarities, the country could not strictly rely on international laws to assess environmental issues. It is in this context and following the international change for institutionalising the environmental matter that the Brazilian legislator sought to create specific legislation for environmental policy in the country. The start-up of this new legal framework was marked by two Decrees about the control over industrial pollution: Decree-Law 1.413 of 1975⁴⁹¹ and Decree 76.389/75.⁴⁹²

The influence of the sustainable development vision on the Brazilian environmental policy culminated with the enactment of Federal Law 6.938 of 1981 which established the National Policy for the Environment. The Federal Law adopted Ecological-Economic Zonings⁴⁹³ and Environmental Impact Assessments⁴⁹⁴ as tools for the planning of the development of the territories. It also created the National System for the Environment (SISNAMA)⁴⁹⁵ and CONAMA.⁴⁹⁶ These became the two main instruments of a rising environmental policy oriented to decentralized actions. Furthermore, any activities risking to cause environmental degradation, according to the Federal Law,

490. In Portuguese, Secretaria Especial de Meio Ambiente (SEMA).

491. Brazil, Decreto-Lei Nº 1.413 de 14 de agosto de 1975. The Decree-Law provides for the control of pollution caused by industrial activities on the environment. *Diário Oficial da União*, Brasília (DF), 14 de agosto de 1975, 10289.

492. Brazil, Decreto Nº 76.389 de 3 de outubro de 1975. The Decree provides for the prevention and control of industrial pollution, dealt with in Decree-Law No 1.413/75, among other measures. *Diário Oficial da União*, Brasília (DF), 06 de outubro de 1975, 13329.

493. In Portuguese, Zoneamento Ecológico-Econômico (ZEE).

494. In Portuguese, Estudo de Impacto Ambiental (EIA).

495. In Portuguese, Sistema Nacional do Meio Ambiente (SISNAMA).

496. CONAMA (n 482).

were responsible to request prior license both from the competent body in that State (member of SISNAMA), and from the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA⁴⁹⁷).⁴⁹⁸

The eighties marked a breakthrough at the Brazilian environmental policy. Awareness of reconciling environment and development was strengthened in the national and international levels when the Brundtland Commission, created by the United Nations in 1983, released the concept 'sustainable development'. The emergence of a new paradigm made this expression to become part of the speech of state representatives, civil society and entrepreneurs. The enactment of the current Federal Constitution in 1988 was another important mark on the development of environmental policies. The Constitution specified States and municipalities to have the authority to formulate their own policies. It also defined as a right to all citizens to have an ecologically balanced environment, and to be the duty of the Federal States and of the community to defend and to preserve the environment.

The laws mentioned on this section were chosen from the Brazilian legal system based on their relevance to provide an understanding of the national legal framework on environmental laws. A special attention has been given into highlighting those laws that regulate issues related to solid residues. The following laws have been organised in a chronological way seeking to evidence the development of the concern of the legislator in elaborating more specific environmental laws and establishing policies.

9.4.1 Constitutional Level

The current Brazilian Constitution is rather recent: it has been enacted in 1988 as a result from great changes in the political scenario. After decades of military dictatorship⁴⁹⁹ the country experienced the return of democracy and, along with it, the need for all rights that had been taken away from society. It was with the enactment of the Federal Constitution of 1988 that for the first time in Brazil an ecologically balanced environment was recognised as of highest importance. Article 225 treasured the right for an ecologically balanced environment as a fundamental right of every individual:

Article 225. Every individual has the right to an ecologically balanced environment, which is an asset of common use for the people and essential to a

497. In Portuguese, Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA).

498. Brazil, Resolução CONAMA Nº 1 de 23 de janeiro de 1986. Diário Oficial da União, Brasília (DF), 17 de fevereiro de 1986. The Resolution has established definitions, responsibilities, basic criteria and general guidelines for the use and implementation of the Environmental Impact Assessment as one of the instruments of the National Environmental Policy.

499. From 1964 to 1985. See Ronaldo Costa Couto, *História Indiscreta da Ditadura e da Abertura – Brasil: 1964-1985* (Record 1999).

healthy quality of life, being of upon the Government and society the duty to defend it and preserve it for present and future generations.⁵⁰⁰

In the chapeau of Article 225, the Public Authorities in all its forms – legislative power, executive power and judicial power – are elected as tutors of the environment, in the same way, all individuals have been appointed as tutors. The duty of the public prosecution services to provide for environmental protection was reiterated on Article 225, first paragraph. While an environmental responsibility for the environment concerning urban residues has also been established in its 3rd paragraph as procedures and activities considered harmful to the environment shall subject the offenders, whether individuals or legal entities, to penal and administrative sanctions, regardless of the obligation to repair the damage that has been caused.

Article 23 (VI) stipulates as common competence for the Union, the States, the Federal District, and municipalities to protect the environment and fight pollution in any of its forms. While Article 24 (VI)(VII) requires the Union, the States and the Federal District to concurrently legislate on forests, fisheries, wildlife, nature conservation, responsibility for damage to the environment, soil protection and natural resources, hunting, protection of the environment and pollution control, and rights and assets of artistic, aesthetic, historic, touristic and landscape value.

Finally, Article 170 (VI) defines as one of the purposes of the Economic Order to ensure all individuals of a worthy existence, one that observes the principle of environmental protection in relation to economic activities.

The Federal Constitution of 1988 has brought unprecedented important benefits for environmental protection. The constitutional protection secured a privileged status to the environment, enabled a greater commitment of the State and society in protecting the environment and promoting sustainable development. Nonetheless, once the effectiveness of the environmental protection offered by the provisions of the Constitution is observed, there is room for much improvement: the aims and perceptions presented of Article 225 and others still depend on changes in perception of the members of the judiciary, lawyers, legislators, public managers, and all society. The protection of the environment in Brazil, once confronted with other constitutional or even infra-constitutional values, still is underprivileged. For this reason, the need for the rational use of natural resources and promotion of a sustainable development to be perceived as of major relevance.⁵⁰¹

500. Brazil (n 451) Article 225.

501. Márcia Dieguez Leuzinger and Marcelo Dias Varella, 'O meio ambiente na Constituição de 1988: sobrevôo por alguns temas vinte anos depois' (2008) 179 *Revista de Informação Legislativa* 397-343.

9.4.2 Infra-constitutional Level

i. Environmental Protection – General Rules

National Policy Law for the Environment – Principles and Instruments

Brazil was still under the government of a military dictatorship and a different Federal Constitution when for the first time a Federal Law officially established a National Policy for the Environment in the country. Prior to the Law 6.939/81, each State or municipality had the autonomy to elect their own political guidelines towards the environment. However, the result of this independence was little interest of the States in legislating on the topic. As presented in the previous topic, the Federal Law 6.938/81 introduced the new concerns about environmental policy that were rising worldwide at that time, and most importantly, it set up a legal framework for all environmental policies of the Federal entities.

The enactment of Law 6.938/81 produced integration and harmonisation of policies having as their base direction the objectives and guidelines that had been established in the Law by the Union. An important aspect of this was the creation of the SISNAMA, an administrative system to coordinate public policy environment involving the three levels the federation – national, state, and municipal – aiming at an effective National Environmental Policy.

The broader and specific goals of the National Environmental Policy are resumed on Articles 2 and 4, respectively. Article 2 informs that the overall objective of the National Environmental Policy is divided into preservation, improvement and restoration of the environment. While Article 4 states that the National Environmental Policy shall aim at:

- I - the compatibility of economic and social development with the preservation of the quality of the environment and ecological balance;
- II - the definition of priority areas for government action concerning the quality and the ecological balance, taking into account the interests of the Union, the States, the Federal District, the territories and the municipalities;
- III - the establishment of criteria and environmental quality standards and rules concerning the use and management of environmental resources;
- IV - the development of research and national technology-oriented rational use of environmental resources;
- V - the dissemination of environmental management technologies, the dissemination of environmental data and information and the formation of a public awareness of the need for preservation of environmental quality and ecological balance;

VI - the preservation and restoration of environmental resources with a view to rational use and permanent availability, contributing to the maintenance of ecological balance conducive to life;

VII - the imposition, the polluter and the predator, the obligation to recover and / or indemnify the damages caused, and the user's contribution for the use of environmental resources for economic purposes.⁵⁰²

Until 1981 there was no clear legal definition for environment. An important step was, therefore, to fulfil such a problematic lacuna. Environment, as it can be found on Article 3 (I) is defined as the set of conditions, laws, influences and interactions of physical, chemical, and biological orders, which allows, protects, and governs life in all its forms. The Law also identified as environmental resources: the atmosphere, the water (interior, surface and ground), the estuary, the territorial sea, the elements of the biosphere, the soil, the subsoil, and the fauna and flora (Article 3 (V)).

A remarkable provision is observed on Article 14 (I) that specifies the possibility of fees and penalties to be applied to those causing environmental degradation. Still on the same Article, the first paragraph states that the actions of those who through their activities cause environmental damage shall be interpreted by the theory of objective responsibility.⁵⁰³ According to the legal text:

Article 14 - Without any prejudice to the penalties set by federal, state and local legislation, the non-compliance of the necessary measures to preserve or fix the inconveniences and damages caused by degradation of environmental quality will subject violators to:

I - a single or daily fine, corresponding to at least ten (10) and a maximum of one thousand (1,000) National Treasure Resettable Obligations - ORTNs, aggravated in cases of specific recurrence, as provided in the regulations. Its collection by the Union shall be taken if already applied by the State, Federal District, Territories or municipalities. (...)

502. Brazil, Lei N° 6.938 de 31 de agosto de 1981. Defines the National Policy for the Environment, its purposes and mechanisms of formulation and implementation and other measures. *Diário Oficial da União*, Brasília (DF), 2 de setembro de 1981, 16509.

503. The objective responsibility is based on the harm actually caused, in the conduct of the agent and the causal link between the injury suffered and the action of the agent. It is a responsibility grounded in the risk assumed by the one causing the damage, as a result of his action. The Theory of Objective Responsibility is the Risk Theory, which states that the one who through his activity creates a risk of harm to third parties will be required to repair it, even if his behaviour was blameless. For its application, the situation is examined and checked, objectively, on what concerns the relationship of cause and effect between the agent's behaviour and the harm suffered by the victim. If such is confirmed, the victim is entitled of compensation. See Maria Helena Diniz, *Direito Civil Brasileiro. Responsabilidade Civil* (Saraiva 2002).

1st § Not disregarding the application of the penalties provided in this Article, the polluter is obliged, regardless of fault, to compensate or repair the damage caused to the environment and third parties affected by his activities. The Union and Federal States Public Prosecutors will be legitimate to bring him to civil and criminal trial for damage to the environment.⁵⁰⁴

The purpose of the National Environmental Policy was set as to enable the compatibility of socio-economic development with the rational use of environmental resources, seeking to control the use of environmental resources in such a way that allows for life and good life quality to exist.⁵⁰⁵

Federal Law on Environmental Crimes

Ten years after the new Federal Constitution, the Law 9.605/98 was enacted and regulated the constitutional provision (Article 225, paragraph 3) that concerns the submission of violators to administrative sanctions, regardless of repair requirement in the civil sphere. The Federal Law is described as with the purpose to provide for criminal and administrative penalties derived from detrimental conducts and activities to the environment. Any and every harm or damage to the elements that form the environment is considered a criminal offence, according to specifications on Chapter V ‘Environmental Crimes’, and its Sections: I) animal life crimes; II) plant life crimes; III) pollution and other environmental crimes; IV) crimes against the city planning and cultural patrimony, and V) crimes against the environmental public administration. Improper disposal of waste is included on Section III, Articles 54 and 56:

Article 54 - Cause pollution of any nature in levels that result or may result in damage to human health, or cause the death of animals or significant destruction of flora: Penalty - imprisonment of one to four years and a fine. (...)

2nd § If the crime: (...)

V - occurs by release of residues - solid, liquid or gaseous - or debris, oil or oily substances, in violation of the requirements established in laws or regulations: Penalty - imprisonment of one to five years.

Article 56 - Produce, process, package, import, export, sell, supply, transport, store, keep, have in storage or use product or toxic substance, hazardous or harmful to human health or the environment, in violation of the requirements

504. See footnote 502.

505. Luís Paulo Sirvinskas, ‘Política nacional do meio ambiente - Lei N° 6.938, de 31 de agosto de 1981’ in Rodrigo Jorge Moraes, Mariangela Garcia de Lacerda Azevêdo and Fabio Machado de Almeida Delmanto (coords.) *As Leis Federais mais Importantes de Proteção ao Meio Ambiente – Comentadas* (Renovar 2005) 91-93.

established by law or in its regulations: Penalty - imprisonment of one to four years and a fine. (...)

II - handles, packages, stores, collects, transports, reuses, recycles or give dispose of hazardous residues differently from established by law or regulation.⁵⁰⁶

The come into effect of the Law marked the moment when the legal rules concerning environmental protection became centralised. From 1998 the new Law included specifications on penalties for environmental crimes, based on a standardised graduation, and the infringements were defined more clearly. Nevertheless, considered to be the greatest contribution made by this Law, was the introduction of liability to legal persons. This created the possibility for companies to be held criminally liable for the damage that their projects may cause to nature (Article 3).

Federal Decree on infringements and administrative sanctions to the environment

The Law No 9.605/1998, among others, conceptualised environmental administrative violation as ‘any act or omission that violates the legal rules of use, enjoyment, promotion, protection and restoration of the environment’⁵⁰⁷ and thus relegated the establishment of the rules of use, enjoyment, promotion, protection and restoration of the environment to other laws. Decree No 6.514/2008 came to regulate this legal vacuum and specified the types of administrative violation and the corresponding sanctions. The Decree reinforced the administrative penalties listed in Article 72 of Law No 9.605/1998 and specified in details their practical application.

In Subsection III of the violations relating to pollution and other environmental violations, Articles 61 and 62 specify the fines relating to causing pollution, a category that includes waste.

Article 61 - To cause pollution of any nature in levels that result or may result in damage to human health, or cause the death of animals or significant destruction of biodiversity:

Fine of five thousand Brazilian Reais (R\$ 5,000.00) to fifty million Brazilian Reais (R\$ 50,000,000.00).

Single § Fines and other penalties referred to above shall be applied after a technical report prepared by the relevant environmental agency, identifying

506. Brazil, Lei Nº 9.605 de 12 de fevereiro de 1998. Federal Law on Environmental Crimes. Diário Oficial da União, Brasília (DF), 13 de fevereiro de 1998, 1.

507. *ibidem* Article 70.

the extent of the damage resulting from the offense and in accordance with the degree of impact.

Article 62 - The same fines of Article 61 apply to whomever: (...)

V - casts solid, liquid or gaseous or debris, oil or oily substances in violation of the requirements established in laws or normative acts; (...)

2nd § Consumers who disrespect their obligations under reverse logistics systems and selective collection will be liable to a warning as penalty.

3rd § In the case of recurrence in committing the offense provided by in § 2, the penalty may be imposed as a fine within the amounts of fifty Brazilian Reais (R\$ 50.00) to five hundred Brazilian Reais (R\$ 500.00).⁵⁰⁸

It is worth noting that the Environmental Police Power was given instruments by means of the tax assessment with the imposition of the listed measures in Article 3 of this Decree: warning, fine, animal seizure, products and fauna and flora by-products and other products and by-products object of the infringement, tools, supplies, equipment or vehicles of any nature used in the infringement, destruction or obliteration of the product; suspension of sales and manufacture of the product; work of embargo or activity and related areas; work of demolition; partial or total suspension of activities and restriction of rights. Such instruments represent a great advance and contribution to the legal framework on problems caused waste management.

Presumed credit on the Tax on Industrial Products for solid waste purchase by industrial companies: Federal Decree No 7.619/2011 and Federal Law No 13.097/2015 (amending Federal Law No 12.375/2010)

Published on 21 November 2011, the Federal Decree 7.619/11 aimed at regulating the concession of presumed credit for the Tax on Industrialized Products when solid waste is purchased. In its first Article the Decree states: ‘companies that acquire solid waste as raw or intermediate material for the manufacture of their own products will be granted credit for the Tax on Industrialised Products (*Imposto sobre Produtos Industrializados - IPI*)’.⁵⁰⁹

The Decree has created an economic incentive for companies as such credit allows reimbursement from the payments made to the tributes PIS/Pasep and COFINS. In order to qualify for it, the company must buy the solid residues directly from scavenger cooperatives of recyclable materials, consisting of at least 20 individuals (Article 2). Initially, this benefit was

508. Brazil, Decreto N° 6.514 de 22 de julho de 2008.

509. Brazil, Decreto N° 7.619 de 21 de novembro de 2011. Regulates the concession of presumed tax credit - IPI in the acquisition of solid waste. Article 1.

made available by the Decree only temporarily: from its enactment on November 22, 2011 until December 31, 2014.

The credit concession was seen as a major incentive for the National Policy on Solid Waste (NPSW)⁵¹⁰ established by Law 12.305/10. This policy-law currently represents the major instrument for the development of take-back systems for certain waste streams and will be studied in detail in the next chapter. The Law 12.305/10 adopts the principle of shared responsibility for the life cycle of products, including manufacturers, importers, distributors and traders, consumers and owners of public services for urban cleaning and solid waste management. In the same vein, the decree also encourages non-generation, reduction, reuse and solid waste treatment and environmentally sound disposal of waste, which are the main objectives of the NPSW.

The initiative for this tax incentive was further developed by the Federal Government with the enactment of the Law No 13.097/2015.⁵¹¹ The law introduced significant changes in legislation, especially with regard to taxes and contributions. One of the provisions (Art.7) brought by this law is of particular interest of this chapter: the Law has altered Article 5 of the Federal Law No 12.375/2010 concerning presumed credit of IPI on the acquisition of solid waste used as raw materials or intermediates in the manufacture of products. Industrial establishments are entitled the presumed credit of IPI when purchasing solid waste until 31.12.2018.

ii. *Waste Sectoral Laws*

The sectors of Pesticides, Tires, and Lubricants Oils, have reverse logistics programmes implemented for over 10 years. Although with different performances together present interesting advances. For example, the take-back system developed for used pesticides packaging can be considered a national and international benchmark. It is characterised by being specific legislation in their sectoral agreement that distinguishes the participation of all links in the chain. More details will be given to each of the take-back systems and their sectoral laws in the next chapter.

510. In Portuguese, Política Nacional de Resíduos Sólidos (PNRS).

511. Brazil, Lei Nº 13.097/2015, de 19 de janeiro de 2015. DOU 1 de 20.01.2015. Art. 7 Law No 12.375, of December 30, 2010, becomes effective with the following modification: 'Art. 5 The industrial establishments shall be entitled, until December 31, 2018, to presumed credit on IPI for when acquiring solid waste to be used as raw materials or intermediates in the manufacture of their products.'

iii. *National Guidelines Law on Basic Sanitation*

Federal Law 11.445/07 ended a long period of uncertainty of the legal framework, launching a new phase in the management of public sanitation services in the country. As it established national guidelines for sanitation but also defined urban sanitation, solid waste management among others, the Law played a central position in planning and conducting orientation of public action.

According to its Article 2 (III), the following were considered as the focus of public sanitation in Brazil: water supply, sanitation, urban sanitation and solid waste management conducted in forms appropriate to public health and environmental protection. It is important to notice that the Law has defined clear focus on solid waste management as one of its focus to protect human health.

For the purposes of this Law, sanitation is considered as a set of services, infrastructure and operational facilities of – among others – urban cleaning and solid waste management. This comprises a group of activities, infrastructure and operating facilities for collection, transport, transshipment, treatment and disposal of household waste and garbage originating from sweeping and cleaning of roads and public places (Article 3 (c)). Further in the Law, waste is referred to on the following articles:

Article 6 - The waste originates from commercial, industrial and services whose responsibility for management is not attributed to the generator may, by decision of the government, be considered municipal solid waste.

Article 7 - For the purposes of this Law, the public service of urban sanitation and solid waste management consists of the following activities:

I - collection, transfer and transport of waste listed in topic 'c' of item I of the chapeau of Art. 3 of this Law;

II - screening for the purpose of reuse or recycling, treatment, including composting, and disposal of wastes listed in topic 'c' of item I of the chapeau of Art. 3 of this Law;

III - sweeping, weeding and pruning of trees on public roads and public parks and any other relevant services to the urban public cleaning.⁵¹²

In its Article 52, the new Law set up the responsibility for the Union – represented by the Ministry of Cities – to prepare a National Sanitation Plan. The plan should cover the supply of water, sewerage, solid waste management and storm water management and other basic sanitation actions of interest to

512. Brazil, Lei Nº 11.445 de 05 de janeiro de 2007. The National Guidelines Law on Basic Sanitation establishes national guidelines for sanitation and other measures. DOU de 8.1.2007 e retificado em 11.1.2007.

the improvement of environmental health, including the provision of toilets and hydro-sanitary units for low-income populations. After a few years of drafting (2009/2010) and a public consultation (2012), the National Sanitation Plan was published in December 2013.⁵¹³

9.5 National Policy on the Management of Solid Waste

In Brazil, the setups of specific legislation related to waste management are fairly recent. For instance, the first national legal framework that has treated urban solid residues as a specific matter has been the National Guidelines Law on Basic Sanitation (Federal Law No 11.445/07). The law was designed to accommodate all forms legally possible of institutional organisation of basic sanitation services, consistent with the multiple social, environmental and economic Brazilian local realities. With the purpose of establishing national guidelines on the matter, the law defines basic sanitation, creates guidelines for delivery of sanitation services, establishes rules for the relationship between owners and contractors services, lists the rights and minimum obligations of users and providers of services, and fixes the basic rules for charging for services of sanitation.

9.5.1 The drafting process of the Federal Law 12.305/2010

The most recent national law approaching the topic of waste management is the Federal Law 12.305/10, which has been enacted by the Federal Decree 7.404/10. After almost two decades of proceedings in the legislative process, the National Policy on Solid Waste and its regulation represent the opportunity for changes to be made to the paradigms of Brazilian society, even if the process has had its delays. On his comments about the instauration of the NPSW, Édís Milaré wrote:

The National Policy on Solid Waste filled an important gap in the national regulatory framework. This initiative is the recognition, even if a late one, of the comprehensive environmental problem affecting the country, a problem of unknown proportions, but with several episodes already registered in various parts of the country, which exactly originates at the allocation and inadequate waste disposal and consequent soil contamination, added to the difficulty of identifying the agents responsible for the improper actions. These episodes indicate the seriousness of situations of contamination of soil and ground waters with actual risk to public health and the environment, in addition to affecting the use of natural resources to benefit the society. Indeed, episodes of soil contamination have as a predominant characteristic the long latent period be-

513. Brazil, Portaria Interministerial Ministerial N° 571 Plano Nacional de Saneamento Básico (PNSB) de 5 de dezembro de 2013. DOU de 6.12.13.

tween the causing fact and the manifestation - and the consequent perception - of the most serious effects on the environment, and sometimes, the health of the surrounding population, directly or indirectly exposed to contamination. According to surveys published in the press at the time of the enactment of Law 12.305/2010, from 170 thousand tonnes of waste generated daily in the country, 40% goes to illegal dumps, 12% are not collected and 48% are sent to sanitary landfills.⁵¹⁴

Reverse logistics, shared responsibility and sectoral agreements are some of the essential and innovative tools to a new collective behaviour proposed by the NPSW towards sustainability. The legal rules included in the new law set determination for the involvement of all society into a cultural change. From producers to consumers – and all other stakeholders in between – the provisions aim to promote the reduction and reuse of waste, the development of inclusive business, and the citizenship with social reintegration for consumers to follow the established rules of adequately separating. Ultimately, it seeks to bring the Brazilian society closer to a transformation into a national sustainable development.

This innovative policy has been created as the result of a long process of discussions at the Brazilian Congress, as well as other governmental institutions. There have been relevant marks in this process, where the struggles in conciliating interests can be observed. The path of negotiations and legislative procedures that led to the current National Policy on Solid Waste started in 1991 when the Federal Bill 203/91⁵¹⁵ referring to storage, collection, treatment, transportation and disposal of waste from health services was presented.

In the following years, the analysis and debates of the Federal Bill took place at the House of Representatives, but other debates and measures were occurring at the same time. In 1998, a Working Group was established under CONAMA. A first attempt for proposing technical guidelines for the management of solid waste was introduced by CONAMA's Proposition No 259 of 30 June 1999. The Proposition, however, was never published.

The House of Representatives created and implemented a Special Commission for National Residues Policy in 2001. The aim was to analyse matters discussed by the Federal Bill 203/91 and the other Bills on similar topics that had been connected to it to finally formulate a global proposal to replace those. However, soon afterwards new members of the House of Representatives were elected and the new legislature abolished the Commission. In the same year, the concern with '*catadores*' (scavengers or waste-pickers) and their connection to the waste management problem led to the 1st National

514. Édís Milaré, *Direito do ambiente: a gestão ambiental em foco – doutrina – jurisprudência – glossário* (Revista dos Tribunais 2011) 855.

515. Brazil, Congresso Nacional, Projeto de Lei N° 203, de 1991 (PLS N° 354/1989). *Diário do Congresso Nacional* (Seção I) Terça-feira 2 de Abril de 1991, 2765-2766.

Congress of Waste Scavengers to be held. The event in Brasilia had 1.600 participants, of which collectors, technicians and social workers from 17 different federal states were represented.

Further on the concern relating to scavengers and waste management policies, in January 2003 the I Latin American Congress of Scavengers was held in Caxias do Sul. The event sought to discuss the need for proper training for scavengers, eradication of waste dumps, waste generators accountability. Still in 2003, President Lula established⁵¹⁶ the Inter-ministerial Working Group of Environmental Sanitation to carry out studies and draw up proposals to promote the integration of environmental sanitation activities within the federal government. The Working Group proposed a restructuring of the Sanitation Sector which led to the creation of the 'Urban Solid Residues Programme'.⁵¹⁷ In 2004 the debate was intensified as the Ministry of Environment promoted discussion groups among ministerial departments and secretaries for elaborating a proposal for the regulation for solid residues. In August of the same year, CONAMA organised a seminar focusing on Contributions to the National Policy on Solid Waste in order to listen to society and formulate a new draft for a the Federal Bill, considering that Proposition 259 was never published and became out-of-date.

In 2005, the focus of the governmental institutions involved with the drafting process of a national policy for solid waste revolved around the need to update the findings on the topic. An internal group was created at the Ministry of Environment to consolidate the contributions from the seminar organised by CONAMA in the previous year, the draft projects for Bills that were being discussed at the Brazilian Congress on the same topic, and the contributions of the various players involved in the management of solid waste. The draft for the Federal Bill 'National Policy on Solid Waste' was discussed with the Ministries of Cities, Health (through FUNASA), Development, Industry and Foreign Trade, Planning, Budget and Management, Social Development and Fight against Hunger and Finance. In the same year a new Special Commission for Residues Policy was implemented in the House of Representatives, reinsuring the political interest on the issue. The Commission was assigned to deliver opinion to the Federal Bill 203/91 and joined cases.

After long years of debates and remarks, in November 2006, the Special Commission at the House of Representatives announced the approval of the

516. Brazil, Senado Federal, Decreto de 4 de Setembro de 2003. Publicação Diário Oficial da União DOU 05/09/2003.

517. Brazil, Ministério das Cidades, Secretaria Nacional de Saneamento Ambiental, Programa Resíduos Sólidos Urbanos. For States, the Federal District, or municipalities and public consortia to implement treatment projects and final disposal of waste in the municipalities of: metropolitan areas, integrated regions for economic development. Also for municipalities with more than 50,000 inhabitants or which are members of Public Consortia with more than 150.000 inhabitants. See more at <www.cidades.gov.br>.

said project.⁵¹⁸ Almost one year later, September 2007, the Executive Power presented the Federal Bill 1991/07⁵¹⁹ so that a National Policy on Solid Waste can be established. The Bill was drafted having in mind the lifestyle of contemporary Brazilian society which, coupled with the marketing strategies from producers, lead to intensive consumption. Such ‘lifestyle’ triggers a series of negative impacts for the environment and public health which are incompatible with the sustainable development model that Brazil sought to implement. This Bill presented stronger inter-relationship with other legal instruments at the federal level, such as the National Guidelines Law on Basic Sanitation (Law 11.445/07) and the Law for Public Consortia (Law 11.107/95) and its regulation by Decree 6.017/07, and interrelated with the Policies for National Environment, Environmental Education, Water Resources, Health, Urban, Industrial, Technological and Foreign Trade and the ones responsible for promoting social inclusion. The Bill was requested – and granted – for joinder to the Bill 203/91.⁵²⁰ A relevant engagement of different actors in the discussions for a National Policy for Solid Residues occurred in 2008. In that year public hearings were held with contribution of the National Confederation of Industry in Brazil,⁵²¹ among representation of other interested sectors, and also the National Movement of Recyclable Materials and members of the Workgroup for Solid Residues. Later in June 2009, a final draft report was presented with additional contributions.

On March 11, the plenary of the House of Representatives approved a substitute for the Senate’s Bill 203/91 that would later create the National Policy on Solid Waste which imposes obligations on businesses, governments and citizens concerning solid waste management. The Bill followed to the Senate to be analysed by its different committees and on July 7 was taken to plenary. On the 2nd of August, President Luiz Inácio Lula da Silva signed the Bill and established the National Policy on Solid Waste: Federal Law 12.305 of 2010, published on the Official Gazette on the 3rd of August of 2010. On the 23rd of December of 2010, Decree 7.404 was also published to regulate the Federal Law 12.305/10. In the same context, Decree 7.405 establishing the Pro-Scavenger Programme, defining the Inter-ministerial Committee for Social and Economic Inclusion of Scavengers of Reusable and Recyclable Materials was published on December 23, same year.

518. Brazil, Câmara dos Deputados, Ata da 170ª Sessão da Câmara dos Deputados, extraordinária, matutina, da 4ª Sessão Legislativa Ordinária, da 52ª Legislatura, em 1 de Novembro de 2006, 48938.

519. Brazil, Casa Civil, Projeto de Lei N° 1991 de 11 de Setembro de 2007 <www.planalto.gov.br/ccivil_03/projetos/PL/2007/msg673-070906.htm> accessed 1 December 2015.

520. Brazil, Câmara dos Deputados, Requerimento de apensação N° 1.670 de 2007, Diário da Câmara dos Deputados, Quarta-feira 19 de Setembro de 2007, 47725.

521. In Portuguese, Confederação Nacional da Indústria (CNI).

9.5.2 State Laws, Regionalisation Studies and State Plans

i. State Laws

The aim of this section is to provide highlights on State Laws that have been enacted on the topic of waste management or co-related ones. At occasions, the laws are focused more or less specifically on waste management, and some States have enacted laws on the topic only after the NPSW came about. Nonetheless, the information on such State laws is pertinent and will be mentioned as follows, limited to the three most relevant ones per State, to prevent this section from becoming too long, as this topic is not the main focus of the chapter. The full list of States and laws related to waste legal rules can be found in the Appendix of this book, as well as sources for those interested in reading the full content of such law.

Even though the Federal Law that has established and organised a National Policy for Solid Residues in Brazil dates from 2010 State Laws approaching the matter existed previous to its enactment. Some of these State Laws can be noticed to be simply a reflex of the long twenty-year-process that finally resulted in the NPSW, and therefore came about only a few years previous to the Federal Law. Some express the rising perception of the need for such a relevant topic to be legally observed, and were published considerably earlier than the Law 12.305/10.

Due to the existing diversity among the twenty six federal States, part of the State Laws specifically approach policies and instruments for the management of solid waste, while others establish more general ones, for the protection of the environment, and have decided to refer to solid waste management only in a few of their Articles. From observing the laws of all Brazilian States, one will notice how extremely different legal rules and perceptions exist under one Federation: on one side there are the States that have implemented policies for protecting the environment, for solid waste management, and even for implementation of take-back systems even for WEEE; nonetheless, on the other, there are the States which have implemented the most basic policy – the environmental one – and are certainly yet to enact their regional policy on solid waste and take-back systems.

Once analysing the State Laws on the topic, it is clear that a development of laws has had its start in the mid 90's, even if only in a few States. The Federal States Ceará, Paraná, and Rio Grande do Sul have shown early concern with implementing a properly working basic sanitation system, regulating, controlling and inspecting issues such as separate collection, pollution control, and recycling, for instance. Yet, most of the State Laws for these matters were enacted after the beginning of the new millennium.

As it will be seen in more details in the next chapter, in the first years of the new millennium, the Bill No 203 of 1991 received considerable attention in the political debate, and its process for been analysed, adapted, and enact-

ed as what today is known as the National Policy on Solid Waste had finally begun to move forward. It is within this period that most of the State Laws for a proper management of solid residues, some of them already including provisions for recycling processes, began to rise. This was the case for States as Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pernambuco, Rio de Janeiro, Rondônia, Roraima, Santa Catarina, and São Paulo.

Finally, the appearance of State Laws to approach take-back systems for certain waste streams – waste electric and electronic equipment among them – in specific is quite more recent. Only after the enactment of the NPSW in 2010 that States like Acre, Espírito Santo, Pernambuco, Rio de Janeiro, Rio Grande do Sul, and Rondônia have published State Laws for take-back of WEEE. The exceptions are Paraná(2008), Pernambuco(2009), and São Paulo(2009).⁵²²

ii. *Regionalisation Studies and State Plans on Residues Management*

Taking in account the 2nd of August 2012 as the deadline established by the National Policy on Solid Waste for States and municipalities to present their Residues Plans – otherwise the federal government is restricted from releasing them resources for investments in the area of solid residues – the official report of the Ministry of Environment⁵²³ informs as eighteen States having signed an agreement with the Ministry of the Environment for obtaining support to preparing the Regionalisation of the Integrated Management of Solid Residues of the State and of the Development Plan for Integrated Management of Solid Residues until 2009. It is noteworthy that the results achieved with the celebration of funds transfer instruments for the development of waste plans under the funds from the Ministry of Environment were object of investments prior to the publication of the law. This means that the results achieved came about three to four years after the agreements had been signed. This can be observed from the evaluation of the results of the support programme to the regionalization studies of integrated solid residues management, in which most agreements for financial support in the years 2007, 2008 and 2009 delivered results in the years 2011, 2012 and 2013. Between 2010 and 2014, the Federal Government – by means of the Ministry of Environment, Ministry of Cities, and the National Health Foundation (FUNASA)⁵²⁴ invested R\$ 1.2 billion to fulfil the provisions brought by the

522. See 'Appendix' of this book for details.

523. Brazilian Ministry of the Environment (MMA), 'Política Nacional de Resíduos Sólidos, Ações do MMA e Governo Federal' (Secretaria de Recursos Hídricos e Ambiente Urbano 2013) 9
www.mma.gov.br/estruturas/a3p/_arquivos/1__politica_nacional_de_resduos_slidos__silvano_silvrio_36.pdf accessed 22 October 2013.

524. In Portuguese, Fundação Nacional da Saúde (FUNASA).

NPSW, and the number of municipalities with proper final destination of solid residues into landfills – instead of unregulated dumps – doubled.

The purpose of such agreements was to guide the interventions of the waste sector in each State, aiming at regionalisation of the State and preparation for the implementation of integrated and consortia solutions, as the NPSW articulates with other areas of law and themes of same relevance, and mainly: the National Policy Law for the Environment (No 6.938/1981), the National Guidelines Law on Basic Sanitation (No 11.445/2007), the National Policy Law for Environmental Education (No 9.705/1999), and the Federal Law for Public Consortia (No 11.107/2005). The projects to be created as the outcomes of the agreements are constituted of: a) preparation of Regionalisation Studies of Solid Residues Management in the States; b) preparation of the Plans for Solid Residues Integrated Management, and c) implementation of a Public Consortia for the management and handling of solid residues. Each federal State that has signed the agreement received an amount from the Federal Government to support the financing of the preparations and creation of those, which is represented in the column ‘Amount’ of the table below.

Nonetheless, despite of the possibilities of financial support made available by the Federal Government, by the time of the expiration of the original deadline, those proved not enough for the Residues Management Plans to be ready on time. By August 2015 only seventeen states had concluded the Regionalisation Study for their State. The Regionalisation Study is a part of the minimum content of Solid Residues State Plans financed by the Ministry of Environment and it assess ideal arrangements of municipalities for consortium and sharing of infrastructure and management of solid residues. The following table brings up-to-date information regarding the agreements, the regionalisation and the waste plans.⁵²⁵

525. The list has been elaborated by this researcher based on websites and reports of the Ministry of Environment and received official approval from the Ministry in April 2016.

Table 9.6 Regionalisation Studies Plan for Solid Residues and Funding Agreements per State

Brazilian Federal State	Agreements with Federal Government (MMA)		Conclusion of Regionalisation Study ⁵²⁶	Conclusion of State Plan for Solid Residues (PERS) ⁵²⁷
	Funding for the Studies	Funding for the Plans		
Acre	2008 \$380.440	-	January 2012	January 2012 (adapted from the Study)
Alagoas	2007 \$333.330	2011 \$1.170.000	October 2010	March 2016
Amapá	-	-	-	-
Amazonas	-	2011 \$1.732.500	-	April 2016
Bahia	2007 \$1.000.000	2011 Signed agreement but no transferred budget	December 2012	Suspended
Ceará	2008 \$444.440	2011 \$1.485.000	April 2012	In preparation
Espírito Santo	-	2011 \$1.588.922,45	March 2008 (State's own budget)	In preparation
Goiás	2009 \$423.670 Cancelled agreement	2011 \$ 558.000	Not concluded (cancelled agreement)	In preparation
Maranhão	2007 Cancelled agreement	-	Not concluded (cancelled agreement)	June 2014 (State's own budget)
Mato Grosso	2009 Cancelled agreement	2011 Signed agreement but no transferred budget	Not concluded (cancelled agreement)	Suspended

526. Brazilian Ministry of the Environment (MMA), Estudos de Regionalização (4 September 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10545-estudos-regionalizacao> accessed 30 December 2015.

527. Brazilian Ministry of the Environment (MMA), Planos Estaduais de Resíduos Sólidos (29 December 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10611-planos-estaduais> accessed 30 December 2015.

Brazilian Federal State	Agreements with Federal Government (MMA)		Conclusion of Regionalisation Study ⁵²⁸	Conclusion of State Plan for Solid Residues (PERS) ⁵²⁹
	Funding for the Studies	Funding for the Plans		
Mato Grosso do Sul	-	2011 \$ 1.500.200	-	In preparation
Minas Gerais	2007 \$974.226	2011 \$960.000	September 2010	In preparation
Pará	2008 \$640.000	-	April 2013	June 2014
Paraíba	2009 \$669.114,86	-	December 2013	-
Paraná	2009 \$657.600	2011 \$1.750.000	June 2013	In preparation
Pernambuco	2007 \$444.330	2011 \$ 1.286.100 Cancelled agreement	April 2013	July 2013 (State's own budget)
Piauí	2007 \$777.780	-	December 2014	December 2014 (adapted from the Study)
Rio de Janeiro	2007 \$1.493.200	-	August 2013	January 2014 (adapted from the Study)
Rio Grande do Norte	2008 \$600.000	2011 \$1.440.000	January 2012	In preparation
Rio Grande do Sul	-	2011 \$1.750.000	-	December 2014
Rondônia	2009 \$557.980 Cancelled agreement	2011 \$1.120.479,39	Cancelled agreement (not concluded)	In preparation
Roraima	-	-	-	-
Santa Catarina	2008 \$500.028	2011 \$ 1.248.000	September 2014	In preparation

528. Brazilian Ministry of the Environment (MMA), Estudos de Regionalização (4 September 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10545-estudos-regionalizacao> accessed 30 December 2015.

529. Brazilian Ministry of the Environment (MMA), Planos Estaduais de Resíduos Sólidos (29 December 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10611-planos-estaduais> accessed 30 December 2015.

Brazilian Federal State	Agreements with Federal Government (MMA)		Conclusion of Regionalisation Study ⁵³⁰	Conclusion of State Plan for Solid Residues (PERS) ⁵³¹
	Funding for the Studies	Funding for the Plans		
São Paulo	-	2011 \$1.750.000 Cancelled agreement	-	October 2014 (State's own budget)
Sergipe	2007 \$277.885,36	2011 \$495.000	December 2014	December 2014
Tocantins	-	2012 \$1.500.000	-	In preparation

9.6 Conclusions

For too many decades Brazilian society has been mistreating its lands, polluting the soil, the rivers, and the air. When it comes to city areas, these negative impacts are aggravated by problems such as urban mobility, lack of permeability, and accelerated consumption. The urgency for a drastic change to occur, therefore, is obvious. Nonetheless, '[t]he change is a mixed process of changing habits, involving scientific research, trade and industry sectors and the traditional agricultural practices'.⁵³²

To do so, a multidimensional vision shall be adopted, capable of dealing with all aspects of waste management, considering the technical, social, economic, environmental and political streams. It is clear that only legal rules are not enough to change current practices and correct deviations. To achieve deep changes, all actors – private and public institutions, legal persons and individuals – must be involved and have clear roles. Certainly, a major role and play of the authorities responsible for the waste management in the municipalities would be one of the most important actions considering that the

530. Brazilian Ministry of the Environment (MMA), Estudos de Regionalização (4 September 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10545-estudos-regionalizacao> accessed 30 December 2015.

531. Brazilian Ministry of the Environment (MMA), Planos Estaduais de Resíduos Sólidos (29 December 2015) <www.mma.gov.br/cidades-sustentaveis/residuos-solidos/material-t%C3%A9cnico/item/10611-planos-estaduais> accessed 30 December 2015.

532. Gilberto Natalini, 'Discurso de abertura' (IV Congresso de Boas Práticas Socioambientais, São Paulo, 20 August 2013) <www.fiesp.com.br/mobile/noticia/?id=98952> accessed 15 December 2015.

need for higher investments, for technologies, new knowledge and, above all, some minimum infra-structure lacking in so many smaller cities.⁵³³

In the last decade in Brazil, the possibilities and advantages of cooperation with other federal agencies through the establishment of public consortia in the manner specified by the Basic Sanitation Law (Law 11.445/2007) and Public Consortia Law (Law 11.107/2005) and their respective regulatory decrees (Decree 7217/2010 and Decree 6.017/2007) were noticed to be rare. Partially, the issue was the lack of proper implementation and monitoring, but also, the absence of a legal rule establishing a national policy on solid waste was inexistent until 2010 and it harmed in great extent the development of good waste management systems in the country. Prior to the Federal Law 12.305/10, public and private actions on solid waste management did not have clear definition of responsibilities, nor guidance for priority actions, or infra-structure to be built.

The legal framework existing before the enactment of the NPSW was insufficient to organise and sustain a proper system for the management of waste in Brazil, one which could include the concepts of waste reduction, recycling and reuse. As it will be explained in the next chapter, the law 12.305/10 brings a new strategy to meet the need to deal with this rapidly growing matter that is the solid residues management: one that is able to optimise a better use of the existing resources of what is usually labelled as garbage and simply thrown away in landfills. A policy for solid residues however, requires a structured format, consolidated and organised, and specific instruments. The next chapter will study the responsibilities, actions, and deadlines established by the NPSW to conduce Brazil to a better, sustainable, development. It will also focus on the provisions concerning the setup of take-back systems for waste streams, and, more specifically, the waste electrical and electronic waste stream.

533. In 2012, 42,02% of the urban solid waste was inappropriately disposed – about 23.8 million tonnes – which come from over more than 3.000 municipalities, most of them with less than 10.000 inhabitants and still not enabled with technical and financial conditions to solve this problem. ABRELPE, 'Panorama dos Resíduos Sólidos no Brasil 2012' (2013) 110 <www.abrelpe.org.br/panorama_edicoes.cfm> accessed 4 November 2013.

Brazilian Policy Law for Waste Management and Developments for the setup of the take-back System for WEEE

10.1 Introduction

While publications such as the E-waste World Map from StEP Initiative⁵³⁴ have brought the attention of businesses, governments, and citizens around the world to become more aware of the danger that electronic waste represents, and of the importance of its proper disposal, studies show continuous growth on the amounts of WEEE discarded in most of the countries they have analysed, with a major part of those still being landfilled. In Latin America, Brazil is in evidence. The country produced 1.4 million tonnes of e-waste in 2014 – equivalent to a global average of 7 kg per capita – and ranks second in Latin America, where the first place is occupied by Mexico, which led to 9 kg per person.⁵³⁵

Even though the take-back programmes agreed for tires, used lubricant oil, pesticide containers, and batteries certainly represent an advance for the Brazilian legal framework and society, until the end of 2015 no agreement was reached for the WEEE waste stream. The batteries take-back systems and legal rules represent the only Federal scheme currently available and related to the electronics industry at some extent. However, it cannot have its application simply extended to WEEE, where specific features and definitions of roles and responsibilities are lacking detailing from the Federal Government. For this reason, this part of the study is largely focused on the issue at hand.

Brazil has taken an important first step even before the NPSW was launched in 2010. This has happened once the country signed the Basel Convention and issued national regulations to prohibit that hazardous waste was imported from other countries, and to contribute to actions to prevent illegal movements of e-waste (one of the hazardous waste) across boundaries. None-

534. Founded in 2007 StEP is an initiative of UN organisations aiming at solving the e-waste problem. StEP is coordinated by the United Nations University and gathers members from industry, governments, international organisations, NGOs and the science sector. For more information see StEP E-waste WorldMap.

535. Kees Baldé and others, *The global e-waste monitor – 2014* (IAS – SCYCLE, United Nations University 2015) 40, 64.

theless, a development of a national legal framework for the rapidly growing figures of residues of end-of-life electric and electronic equipment produced every day is yet to be achieved.

Established by the Federal Law 12.305/10 and regulation by the Federal Decree 7.404/10 the NPSW brings principles, objectives and instruments, definitions, as well as guidelines, relating to the integrated management and waste management, including hazardous waste. Furthermore, it determines the responsibilities of the waste producers and the government's and the economic instruments applicable to dealing with those matters.

This chapter goes deeper into the study of Brazilian national policy law for waste and its contribution to the process of establishing legal rules to organise a national take-back system for certain end-of-life products. The focus is particularly directed on the set-up of the take-back system for the e-waste stream, from the beginning to the end of electrical and electronic equipment's lifecycle. The aim is to understand how the process of implementing these recent legal rules in the country has been shaped for WEEE. Furthermore, an analysis of the current situation, seeks to identify where there could be room for improvements or need for solutions.

10.2 Examining Law No 12.305/2010: the National Policy on Solid Waste (NPSW)

10.2.1 Principles

Article 6 of the Federal Law 12.305/10 declares as guiding principles of the National Policy on Solid Waste:

I - prevention and precaution

II - polluter-pays and the protector-receives

III - a systemic view in solid waste management, one which considers the environmental, social, cultural, economic, technological and public health variables

IV - sustainable development

V - eco-efficiency: by reconciling supply, competitive prices, qualified goods and services that meet the human needs and bring life quality, that reduce the environmental impact and the consumption of natural resources to a level at least equivalent to the estimated capacity the planet supports

VI - cooperation among the different spheres of the government, the business sector and other segments of society

VII - shared responsibility for the life cycle of products

VIII - recognition of the reusable or recyclable solid waste as an economic good of social value, able to produce jobs and income and to promote citizenship

IX - respect for local and regional diversity

X - the right of society to access information and social control

XI - reasonableness and proportionality⁵³⁶

With the inclusion of a rather extensive list of principles in its Article 6 – most of them already familiar to the Brazilian Environmental Law – the Policy Law on Solid Waste intended to bring focus to an attentive application on the law. The principles provide clear guidance to those who will interpret and apply this regulation. As Paulo Affonso Leme Machado suggests, these principles must be interpreted in a permanent correlation with all the provisions brought by the law, especially the definitions (Art.3), the objectives (Art. 7), the general provisions (Art. 4) the instruments (Art. 8) and the preliminary provisions of Chapter I of Title III.⁵³⁷ Following, some of the principles will be analysed as to what regards the Brazilian Environmental Law and the National Policy on Solid Waste.

The prevention principle is intended to anticipate the damage when the consequences performing certain action are known or when the potential to damage has already been proven or results from logical thinking. Adopting a preventive public policy for the environment means anticipating behaviours that are harmful to the environment and public health. In terms of the waste problem, prevention is present in the implementation of the Solid Waste Plans (in their different levels).⁵³⁸ The ultimate goal of the prevention principle is to avoid damage altogether. Only when this is not possible other behaviour should be accepted: one that reduces or mitigates the damage.

The precaution principle is applied once the consequences of a specific act are not known for sure. That is, the principle of precaution is imperative when the lack of full scientific certainty persists and the ‘risk’ is the only existing symptom. Risk is understood as the uncertain possibility of damage. The protection of the environment from being put at risk is included in the Constitution. Its Article 5(1)(V) states that it is to the public authorities to

536. Brazil, Lei Nº 12.305 de 02 de agosto de 2010. Establishes the National Policy on Solid Waste, alters Law Nº 9.605 of February 12, 1998 among other provisions. *Diário Oficial da União*, Brasília (DF), 3 de Agosto de 2010, 3.

537. Paulo Affonso Leme Machado, ‘Princípios da Política Nacional de Resíduos Sólidos’ in Arnaldo Jardim, Consuelo Yoshida and José Valverde Machado Filho (eds.), *Política Nacional, Gestão e Gerenciamento de Resíduos Sólidos* (Manole 2012) 39-56, 39.

538. In Brazil, different Environmental Laws make use of mandatory plans as a result from the incorporation of the prevention principle. A few examples are: Federal Law No 9.433/1997 (Water Plan); Federal Law No 11.445/2007 (Basic Sanitation); Federal Law No 12.334/2010 (Dam Safety Plan).

control the production, commerce, or application of techniques, methods and substances that bring risk to life, life standards, and the Environment. The head of the same Article declares the Environment as essential to a healthy life standard. Also the 1992 Rio Declaration, to which Brazil is a signatory, incorporates the precaution principle in its Principle 15.⁵³⁹

The polluter-pays principle applies to any individual or legal person in any kind of relationship with the environment. It determines that all who contribute to deteriorate the environment in any way should bear the costs of decontamination and restoration of such environment. The protector-receives principle postulates that any public or private agent that protects a natural good for community should receive a financial compensation for the service of environmental protection provided. Federal Law No 6.938/1981⁵⁴⁰ sets that the National Policy for the Environment shall seek to enforce, on the user, the due contribution for the use of environmental resources for economic gains, and, on the polluter, the obligation to recover and/or to indemnify the damage that has been caused. In the aim of the NPSW the polluter-pays principle brings as a consequence the institution of the shared responsibility principle.

The principle of shared responsibility has been included in Article 3 (XVII) of the NPSW. According to the Article, shared responsibility for the life cycle of the products is a set of individualised and interconnected assignments of the manufacturers, importers, distributors and traders, consumers and holders of urban cleaning public services and solid residues management aiming at minimising the generation and volume of solid waste as well as reducing the impacts resulting from the product life cycle to the human health and the environmental quality. It is interesting to observe that the NPSW defines responsibilities to all of the actors that are involved in the product's lifecycle. Nonetheless, this does not remove the individualisation of the responsibility on every action or omission from the natural person or legal person. Under the proposed NPSW, the reference to shared responsibility makes it clear the need for further regulatory development and emphasises the mandatory participation of each of the stakeholders in a joint way. This aspect is perhaps the most important, after all, the burden (not just economic) of the proper destination and disposal of waste should be described to be shared among all participants in the chain of production and consumption in order to prevent only a few actors have to bear alone the cost that should be

539. Principle 15 In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. UNEP, Rio Declaration on Environment and Development (Rio de Janeiro, 14 June 1992) <www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163> accessed 31 May 2014.

540. Brazil, Federal Law No 6.938/1981, Art. 4 (VII).

distributed to all. In these terms, the shared responsibility gives more meaning to the polluter pays principle, under which the cost of ‘pollution’ should preferably be assigned to the one who receives the benefits of its generation.

The last principle to be discussed here is the right assigned to society to access information and to enjoy social control. With this principle the Law recognised the relevance of environmental support and publicity’s ethics to avoid unsustainable behaviours and inefficient procedures. According to the NPSW the information – data, reports, studies, instruments, analysis – must be made available to all and the World Wide Web must be used. The National Information System on Solid Waste Management⁵⁴¹ created by the regulating Decree (Art. 71) was created with the purpose of achieving this goal. It is worth noting that the same Decree, Article 23, the responsibility for maintaining accurate and up-to-date information concerning implementation and operationalization of the waste plans was specified. The responsibility applies to the actors responsible for elaborating the plans for waste management and it has been interpreted that it characterises as crime in the case of incomplete information or disinformation (to which apply Art. 68 Federal Law No 9.605/1998 and Art. 10 Federal Law No 7.347/1985).

10.2.2 Main Concepts and Definitions

Being an instructive norm as it is, the NPSW brought in its Articles and paragraphs not only the guidelines, responsibilities, and instruments for dealing with waste in Brazil, but also concepts and definitions to add to the principles and be used as a basis for all interpretations.

For this reason, Article 3 of the policy-law must be observed as it includes a series of definitions: sectoral agreements, contaminated areas, product life-cycle, separate collection, take-back system, etc. Among those definitions there is the distinction between ‘refuse’ (*rejeitos*) and ‘solid residues’ (*resíduos sólidos*). ‘Refuse’ is understood as the solid residue that remains once all possibilities for treatment and recovery have been explored within technological and economic viabilities. It has no possible destination other than an environmentally sound disposal. ‘Solid Residues’, in turn, are defined as any substance, material or disposed object resulting from human activities in society to which a final destination proceeds, aims to proceeding or is obliged to proceed. Those may be either in the solid or semisolid state, as well as gases and liquids in containers whose characteristics make it unfeasible to be launched in public sewers or water, or to require that solutions technically or economically unviable considered the best technology available. It is important to stress that industrial residues which can be reused, recycled,

541. In Portuguese, Sistema Nacional de Informações sobre a Gestão de Resíduos Sólidos (Sinir).

or reprocessed within the manufacturing process are not considered solid residues according to this law.⁵⁴²

As disposed in Article 13 of the NPSW, considering its different sources, solid residues are classified in the following categories:

- a) domestic residues: generated from domestic activities in urban residences;
- b) residues resulting from urban cleaning services: generated from sweeping, cleaning of public areas and streets, and other public cleaning services;
- c) urban solid residues: the ones listed in topics 'a' and 'b';
- d) residues from commercial establishments and service providers: residues generated by those activities, except for the ones referred to in topics 'b', 'e', 'g', 'h' and 'j';
- e) residues resulting from public sanitation services: residues generated by those activities, except for those referred to in topic 'c';
- f) industrial residues: waste generated in productive processes and industrial facilities;
- g) medical residues: waste generated by health services, as defined by regulations or in norms established by SISNAMA⁵⁴³ or SNVS⁵⁴⁴ bodies;
- h) civil construction residues: residues generated in construction sites, refurbishments, reforms and demolitions in the civil construction industry, including the ones resulting from site preparation and excavation for civil construction;
- i) agricultural residues: residues generated in agro-forestry and cattle-raising activities, including supplies used in those activities;

542. Brazil 2010a (n 536), Article 3 items XV and XVI.

543. SISNAMA is the National System for the Environment, established by Law 6.938 of August 31, 1981 and regulated by Decree 99.274 of June 6, 1990. It is constituted by entities of the Union, the States, the Federal District, Municipalities and the foundations established by the Government and is responsible for the protection and improvement of environmental quality. The performance of SISNAMA relies on the coordinated actions of the bodies and entities forming it. The States, the Federal District and Municipalities are responsible for adapting to their region the measures emanating from SISNAMA, through the development of supplementary and complementary norms and standards
<www.mma.gov.br/port/conama/estr1.cfm> accessed 5 November 2013.

544. In Portuguese, *Sistema Nacional de Vigilância Sanitária (SNVS)*. It stands for 'National Health Surveillance System'. It was defined by Law 9782 of January 26, 1999 and it represents the instrument of the SUS (Unified Health System) to achieve its goal of prevention and health promotion. The system includes units in the three levels of government - federal, state and municipal - with shared responsibilities
<<http://portal.anvisa.gov.br/wps/portal/anvisa/agencia/publicacao+agencia/vigilancia-sanitaria-no-brasil>> accessed 5 November 2013.

- j) transport residues: residues generated in ports, airports, customs, bus stops, railways and borders;
- k) mining residues: residues generated in research, extraction or processing in mining activities.⁵⁴⁵

Regarding that which relates to the level of endangerment there are also the 'hazardous residues' – which due to their characteristics of flammability, corrosiveness, reactivity, toxicity, pathogenicity, carcinogenicity, mutagenicity, and teratogenicity – present a significant risk to public health or environmental quality.⁵⁴⁶ The residues not included in that concept are considered non-hazardous. It is important to stress that radioactive residues is the responsibility of the National Commission of Nuclear Energy (CNEN) and therefore is not covered by the National Policy on Solid Waste.

The definition of management of Solid Residues, adopted by the Law 12.305 states that it is a set of actions to be developed, directly or indirectly, in the stages of collection, transportation, transfer, treatment and environmentally adequate disposal of solid residues, according to the municipal plan for integrated management of solid residues or plan for solid residues management, required in terms of this Law.

10.2.3 NPSW: Main instruments

i. Integration of Catadores

An important expression used by the NPSW is the integrated management of solid residues. Based on the principle of shared responsibility is refers to a set of actions, both from Public Administration and civil society, aimed at finding solutions to solid residues, in order to consider the political, economic, environmental, cultural and social, under the premise of sustainable development. In Brazil, when referring to integrated management it is not possible to set aside the importance of the waste pickers. Usually organised in unions, they are the greatest responsible for separating urban solid residues for recycling. Such a dynamic is interpreted as a positive model⁵⁴⁷ by the Public Administration, once it increases the efficiency of the recycling system and reduces the costs of programmes for selective waste collection.

545. Brazil 2010a (n 536).

546. According to Article 13 of NPSW and the technical standard Brazilian Association of Technical Standards (ABNT) 10004/04.

547. Jacques Demajorovic, Gina Rizpah Besen, and Alexandre Arico Rathsam, 'Os desafios da gestão compartilhada de resíduos sólidos face à lógica do mercado' GT11: Cidade e sustentabilidade (II Encontro da Associação Nacional de Pós-Graduação e Pesquisa em Ambiente e Sociedade, Indaiatuba, 26 – 29 May 2004) 5-6
<www.anppas.org.br/encontro_anual/encontro2/#11> accessed 9 December 2013.

The legalisation of waste pickers as workers with rights fully assimilated still is an on-going process. Nonetheless, the following laws and decrees represent the legal framework that has been recently developed to assist such process, by integrating waste pickers to the recycling dynamics of solid residues, respecting and recognising their social and economic importance. By observing the chronology of these it is possible to verify the emergence of this concern by the legislator.

Decree (no number) of September 11, 2003 (Revoked by Decree No 7.405/2010): Creates the Inter-ministerial Committee for Social Inclusion of Waste Pickers.

Decree No 5.940/2006 - establishes the separation of recyclable waste discarded by the organs and entities of the direct and indirect federal administration and its destination to associations and cooperatives of waste pickers of recyclable material.

Law No 11.445/2007 - National Sanitation Policy - Establishes national guidelines for sanitation and the hiring of cooperatives and associations by municipalities, for services of selective collection with bidding waiver.

Law 12.305/10 and Decree 7.404/10 - National Policy on Solid Waste - Integration of waste pickers in the actions of shared responsibility for the lifecycle of products.

Decree 7.405/10 - Establishes the Pro-scavenger programme, creates the Inter-ministerial Committee for Economic and Social Inclusion of Scavengers of Reusable Recyclable and Materials Recyclers, denominates the Inter-ministerial Committee for Social Inclusion of waste pickers, provides for its organisation and operation.

Decree 7.619/11 - Regulates the concession of presumed tax credit in the acquisition of solid residues from waste pickers unions or cooperatives.

ii. *Reverse Logistics or take-back systems*

The reverse logistics, or take-back system, is recognised as one of the most innovative instruments within the Brazilian Environmental Laws. Article 3(XII) of the Policy Law and Article 13 of Decree 7.404/10 define reverse logistics as an instrument of economic and social development characterised by actions, procedures and means to enable the collection and recovery of solid residues to the business sector for reuse in its cycle, in other production cycles or other environmentally appropriate disposal. The Decree also defined that the reverse logistics systems concerning the six groups of products listed on Article 33 of the Policy Law should be implemented and operationalised by means of one of the three possibilities (Article 15): sectoral agree-

ments(I), regulations issued by the Executive Power(II), or terms of appointment(III). The following Articles specify the details each of the possible paths for a national take-back system to be created.⁵⁴⁸

From Articles 19 until 29, the Decree has referred to Sectoral Agreements. Sectoral agreements also received a clear definition for the purposes of the NPSW: acts of contractual agreements signed between the government and manufacturers, importers, distributors or retailers in order to deploy shared responsibility for the lifecycle of the product (Article 19). The procedure for the implementation of reverse logistics by such agreements may be initiated either by the public authorities or by the private sector (Article 20). The details on the conditions, requirements, and procedures for a take-back system to be implemented by means of a sectoral agreement are specified on Articles 21 to 29.

The second instrument: the process of issuing federal legislation by the Executive Power was detailed by Articles 30 and 31 of the same Decree when stressing that take-back systems may be directly implemented by legislation, by means of a Decree to be edited by the Executive Power (President). This alternative has been avoided in order to favour the engagement and co-participation of all stakeholders from the e-waste dynamics into the development of sectoral agreement proposal. The use of sectoral agreements has been elected by the general understanding of representatives of public and private sector as the alternative which will most likely provide successful results.⁵⁴⁹

The third and last possible instrument for establishing take-back systems is specified in Article 32. The article describes two possibilities for the case when public authorities can perform Terms of Appointment with manufacturers, importers, distributors, or sellers. The Terms of Appointment are conceived either in cases when no sectoral agreement or specific legislation exist within a same reach according to the terms of the Decree, or with the purpose of establishing more stringent commitments and goals than the ones stipulated in the Sector Agreement or Legislation. The terms of commitment must be approved by the competent environmental agency (state or municipal), and either party can individually sign a term of commitment, having the instrument a state-wide validity (Article 32, Decree 7404/2010), providing the States to technically and economically evaluate it. It is interesting to notice that the legislator was thorough and precise in specifying the conditions and procedures for the establishment of Sectoral Agreements. This was not the

548. Brazil, Decreto Nº 7.404 de 23 de dezembro de 2010. Regulates Law 12.305/10 which established the National Policy on Solid Waste. Establishes the Inter-ministerial Committee of the National Policy on Solid Waste and the Steering Committee for the Implementation of Reverse Logistics Systems, and others. *Diário Oficial da União*, Brasília (DF), 23 de dezembro de 2010, 1.

549. According to comments obtained during interviews to Ministry of Environment, and representatives of industry.

case for the federal legislation enacted by the executive power or for the terms of appointment.

Further, according to Article 33 of the Decree, the committee referred to as 'Steering Committee for Implementation of Reverse Logistics Systems' (CORI) is formed by the Ministry of Environment, Ministry of Health, Ministry of Development, Industry and Foreign Trade, Ministry of Agriculture, Livestock and Supply, and Ministry of Finance. Its competences were defined in the same section of the Decree, on Article 34. The inter-ministerial committee was given the task to establish the procedures for drafting the National Plan for Solid Residues and evaluate its implementation, set additional information from the plan of Hazardous Solid Waste Management, promote studies and propose tax exemption measures of recyclable products and simplification of procedures for the fulfilment of obligations relating to the movement of products and packaging manufactured from these materials. As well as promote studies for the creation of financing lines, formulate strategy for the promotion and diffusion of clean technologies for the management and waste management, to propose measures for the implementation of instruments and enforcement of the NPSW goals, define and evaluate the implementation of decontamination mechanisms of orphan areas, implement actions to support the development, implementation and review of waste plans, contribute to the establishment of charging mechanisms of urban sanitation services and management of municipal solid waste.

The Steering Committee should; also establish the guidelines for the implementation of reverse logistics systems; define priorities and approve the schedule for launching the public call for sectoral agreements proposals; establish deployment schedules of reverse logistics; approve studies of technical and economic feasibility; set guidelines for evaluating the social and economic impacts of the reverse logistics systems; assessment of sectoral agreements, regulations and terms of federal appointments; define the packaging which is exempted from manufacturing with reusable or recyclable materials; define the embodiment of consultation public for implementing reverse logistics; conduct studies for tax relief supply chains subject to reverse logistics and simplification of requirements for movement of products subject to this system and propose foreign products to include measures in reverse logistics systems.

As it will be seen later in this chapter, the Steering Committee established thematic technical groups, where it is assumed the participation of representatives of civil society, to promote technical discussions and to achieve convergence and solutions, as it will be studied further in this chapter. The technical group countersigns the assessment of technical and economic feasibility of a specific take-back system, which must be brought for approval of the Steering Committee before the opening of the public call is announced.

iii. *Shared Responsibility*

Concerning the actors and responsibilities towards the take-back systems to be implemented, the NPSW included in its Article 33 a list of waste streams and general provisions. Further in this chapter the different waste streams specified for mandatory take-back systems to be created will be explained in details. Here, they will be only mentioned: I) pesticides (and residues and packaging), II) battery cells and batteries, III) tires, IV) lubricant oils (and residues and packaging); V) fluorescent bulbs, sodium and mercury vapour bulbs, and mixed-light bulbs; and VI) electrical and electronic equipment (and components).

Article 33 states that manufacturers, importers, distributors and sellers of the products included in the six waste streams listed above are compulsorily required to structure and implement reverse logistics systems upon receiving products from consumers independently from the public service of urban cleaning and waste management. The Article generally defined the actors' responsibilities and mentioned the possibility of: I) implement purchasing procedures of used products or packaging; II) establish drop-off points for reused and recyclable residues; III) work together in partnerships with cooperatives or other forms of association of waste-scavengers collecting reusable and recyclable material (products sold in plastic, metallic or glass packaging, and to other products and packaging, considering the degree and extension of their impact on public health and the environment).⁵⁵⁰

The responsibility brought by the take-back systems to be implemented for the six groups of solid residues, as disposed on Article 5 of the Decree, should be implemented on an individual basis but also in a chained (connecting to all actors), covering manufacturers, importers, distributors and retailers, consumers and members of the public urban cleaning and solid residues management. Therefore, in its Article 5, Decree No 7.404/2010 stresses the liability of suppliers and consumers for the lifecycle of their products. Article 6 provides that whenever established by a municipal entity or when a reverse logistics system is available, consumers are due to condition properly and differentially solid residues, reusable or recyclable, for collection or return. Finally, Article 28 of the NPSW clarifies that the generator of household residues has its responsibility ceased when adequate provision for collection is offered or, in cases covered by Article 33, upon return to the manufacturer or recycler, which is known as the take-back mechanism.

Through the enactment of the NPSW there came an important change concerning the individual. Before, consumers were not penalised by the irregular disposal of debris they would generate, such as dumping of garbage on the streets, beaches etc.. According to the new system, the consumer be-

550. Brazil 2010b (n 548).

came liable for harmful practices against the environment and the community, such as not allocating correctly the residues resulting of his consumption. In addition, Article 25 of the NPSW establishes that the government, the business sector and the community are responsible for the effectiveness of actions to ensure compliance with the NPSW and its regulation by its regulator decree. According to the Policy Law:

Art. 25. The Public Authority, the business sector and the society are responsible for the effectiveness of actions taken towards assuring compliance with the National Policy on Solid Waste, guidelines and other determinations established herein and in the regulation.⁵⁵¹

Therefore the policy brought a new range of duties to consumers, and especially for manufacturers and merchants, but at this point, some scholars⁵⁵² argue is the first obstacle to obtaining effectiveness from the NPSW. The problem arises because there is no specification of how these duties are supposed to be fulfilled, or what is the degree of responsibility that will be assigned to each part of this new system to be. For some, there is therefore a legislative gap, which should be eliminated in the course of implementation, under penalty of becoming an empty and without clearly defined purpose environmental policy.

iv. *Waste Plans*

Furthermore, the National Policy on Solid Waste included guidelines and requirements for the preparation of the Solid Residues Plan, which should include the various types of residues generated, management alternatives capable of implementation and management, as well as goals for different scenarios, programmes, projects and corresponding actions. The following Articles at the NPSW bring some more details:

Art. 15. The Federal Government shall formulate the National Plan on Solid Residues under the coordination of the Ministry of the Environment, to be valid for an undetermined time frame, with a 20 (twenty)-year horizon, to be updated every 4 (four) years (...)

Art. 16. The formulation of state plans on solid residues, under the terms outlined herein, is conditional for states to be entitled to Federal Government's funds, or funds controlled thereby, which are intended for undertakings and

551. Brazil 2010a (n 536) Article 25.

552. José Mário Delaiti de Melo, 'Direito Ambiental: Política Nacional de Resíduos Sólidos e a Necessidade de Lei Geral para Reciclagem de Veículos Automotores, à Luz de Experiência Internacional' *Conteúdo Jurídico* (Fevereiro de 2013) 10
<www.conteudojuridico.com.br/pdf/cj042575.pdf> accessed 4 December 2013.

services related to the management of solid residues, or to be incremented by incentives or financing from federal credit entities or support for this purpose.

Art. 17. State plans on solid residues shall be formulated to be valid for an undetermined time frame, with a 20 (twenty)-year horizon, to be updated every 4 (four) years (...)

Art. 18. The formulation of the municipal integrated plan on solid residues, under the terms outlined herein, is conditional for the Federal District and municipalities to be entitled to Federal Government's funds, or funds controlled thereby, which are intended for undertakings and services related to urban cleaning and the management of solid residues, or to be incremented by incentives or financing from federal credit entities or support for this purpose.⁵⁵³

According to the provisions of the Policy Law, the Waste Plans have the following categories: National Plan; Micro-regional Plans and Metropolitan Areas/Urban Agglomerations Plans; Intercity Plans; Municipal Plans; and Waste Management Plans.

The preparation of solid residues plans were set as a clear condition for Municipalities, the Federal District, and States to have access to National funds for projects and services related urban sanitation and solid residues management, or to be benefited by incentives or financing of federal credit entities or promotion. There is no required sequence for the preparation of plans, be they state, inter-municipal or municipal. Nonetheless, it would be ideal for a sequence order to be followed. The State plans should include regionalisation studies for the implementation of public consortiums between municipalities with economies of scale and scope purposes of gain. Each plan, whether State, municipal or inter-municipal should contain the minimum required under Law 12.305 of August 22, 2010 and its Regulating Decree No 7404 of 23 December 2010.

Additionally, a clear definition of dumps, landfills and its variations must be clarified: basically, there are the Dumps: areas of disposal of solid residues without any previous preparation of the soil, in a few words, open air garbage deposits. Those are being extinct according to the new laws and regulations but still exist in considerable numbers and represent serious sanitary and health risks once there is no treatment of the liquids and gases produced in those areas. The determination for the end of the dumps for 2014 can be read:

Art. 9. When managing solid residues, the following priority shall be observed: non-generation, reduction, reutilization, recycling, solid residues treatment and final environmentally-adequate rejects disposal.

553. Brazil 2010a (n 536). Articles 15, 16, 17 and 18.

§ 1. Technologies for the energetic recovery of urban solid residues may be used, provided that technical and environmental feasibility are proven, and a toxic-gas-emissions-monitoring programme approved by the relevant environmental body had been implemented.

(...) Art. 54. In compliance with the provisions of Article 9 1st Paragraph, final environmentally-adequate rejects disposal shall be implemented within up to 4 (four) years after the date of publication hereof.⁵⁵⁴

There are also the Controlled Landfills, where containment is made after the reject is released in the deposit, by covering it with a layer of earth. This system minimises odour and visual impact as well as prevents the proliferation of insects and animals. However, no sealing base is made (which would prevent the material from contaminating the soil and groundwater water), there is no treatment system for the biogas or liquids that are released. Those were created as an intermediate category between the Dumps and the Sanitary Landfills, in order to soften the deposits in the open. Typically, it is a cell next to the dump which has been remedied or that has been covered in grass and clay.

And there are the Sanitary Landfills, which are the proper final destination of the residues that could not be reused or recycled. In those everything is planned, prepared and operated in a rational manner to prevent damage to public health and the environment. The ground is prepared with soil sealing with clay and webs of PVC for the water table and the soil not be contaminated by fluids released. A capture system through drains also is made so this liquid will have subsequent treatment. The landfill also provides daily coverage of rejects, avoiding the proliferation of vectors, odour and visual pollution. In this system of solid waste disposal, there are no people picking materials among the rejects, and the amount of waste that is disposed is controlled. Sanitary Landfills also have a system to capture and storage or burning of the methane gas resulting from the decomposition of organic substances. And when the time of use of the sanitary landfill is over the company that operates it is responsible of recovering the soil.

Considering the final destination of end-of-life products, the NPSW launched shared responsibility of residues generators by reverse logistics and post-consumer packaging at the same time that it created important goals to contribute to the elimination of dumps and landfills and to establishing planning instruments at national, state, micro-regional, intercity and metropolitan and municipal levels. An important change was the deadline of four years counting from the publication of the Law 12.305/2010 (2010-2014) when municipalities should present laws elaborate for the management of municipal solid residues.

554. *ibidem* Article 9 and Article 54.

The adoption of NPSW also established another ambitious and challenging goal in its Article 54:⁵⁵⁵ ‘The environmentally appropriate disposal of residues should be implemented within four years.’ Which means that according to it, as of August 2014, throughout Brazil, no debris should be dumped in the open and only the waste that cannot be tapped - reused or recycled - after exhausting all possibilities of treatment and recovery by technological processes available and economically viable, show no other possibility than environmentally appropriate disposal – then it may be disposed, but in environmentally suitable locations.

A qualified civil society participation in public policy development has proved to be essential to its success, a reason that led to the inclusion of the social control of the implementation and operationalization of NPSW to be expressly guaranteed on Article 15 item XI:

Article 15. The Federal Government shall formulate the National Plan on Solid Residues under the coordination of the Ministry of the Environment, to be valid for an undetermined time frame, with a 20 (twenty)-year horizon, to be updated every 4 (four) years, with the following minimum content:

(...) XI – means to be used for control and inspection, at the national level, of implementation and operationalization, with social control guaranteed.

Single Paragraph. The National Plan on Solid Residues shall be prepared through a process of social mobilization and participation, which shall include public hearings and consultations.⁵⁵⁶

Finally, the new policy included among its instruments the establishment to of the National Information System on Solid Residues,⁵⁵⁷ while the Decree specified its structure and functions (Articles 71 to 76). This information system gained status to plan and implement public policies on the matter, to guide the allocation of resources to meet the expectations, evaluate the performance of services towards the achievement of objectives, to improve the management and thereby raising levels of efficiency and effectiveness, and to advise on regulatory activities, supervision and social control in the process. It has significant expectations regarding the performance of SINIR, seen as a strategic tool to achieve the NPSW goals.

In summary, according to the NPSW the main instruments for putting into practice the National Police on Solid Residues are: Solid Residues Plans; Separate Collection; Reverse Logistics (take-back systems); Sectoral Agreements; Environmental Education; Tax, Financial and Credit Incentives; Environmental Information System; Environmental License. Thus, in 2011, a few months after the publication and regulation of the NPSW, the Ministry of

555. *ibidem* Article 54.

556. *ibidem* Article 15 item XI.

557. See footnote 541.

Environment coordinated actions for starting the process of preparation of the National Plan on Solid Residues, considered one of the most important instruments suggested by the National Policy as it identifies the problems of the various types of residues generated as well as the guidelines, strategies and goals that will allow the country to promote proper management of its residues, addressing the issue with environmental, social and economic responsibility, management alternatives and management implementable indicating target plans, programmes and actions for positive change on the current frame, giving concreteness to the NPSW.

The project of the National Plan on Solid Residues was planned for implementation by 2014. Its development was discussed in 05 (five) regional public hearings, 01 (one) national public hearing and a public consultation on the internet. Presenting this discussion to such a broad number of actors who have different positions and interests – often opposing to each other – and establishing consensual guidelines and goals, truly represented a considerable challenge.⁵⁵⁸ As a result of this work, the following guidelines were established to lead the National Plan on Solid Residues:⁵⁵⁹

1- Reduction of Wet Solid Urban Residues disposed in sanitary landfill and Treatment and Recovery of gases in landfills: Induce composting, energy recovery from biogas or bio-digesters or landfills, and the development of other technologies aimed at generating energy from the wet portion of MSW collected in the format of previous studies of technical-economic evaluation and environmental, first observed the order of priority established in the chapeau of Article 9 of Law 12.305/2010, and for the production of organic compound with arable purposes, approval by relevant agencies;

2- Reduction of Dry Solid Urban Residues disposed in landfills and Inclusion of Waste collectors Reusable and Recyclable Materials: Promote the progressive reduction of dry recyclable residues disposed in landfills based on national characteristics to be held in 2013, according to the goals set in the National Plan on Solid Residues; Qualification and strengthening of the organisation for socio-economic inclusion of at least 600,000 collectors of reusable and recyclable materials organised in cooperatives and other forms of association, through the creation of credit lines, including the construction and dissemination of knowledge among its members with support from other social programmes for their families;

3- Reduction of Urban Solid Residues Generation: To reduce the current per capita generation of municipal solid residues to the level of 2008 (equivalent

558. Brazilian Ministry of the Environment (MMA), Plano Nacional de Resíduos Sólidos (23 November 2011) 65-72
www.mma.gov.br/estruturas/253/_publicacao/253_publicacao02022012041757.pdf accessed 22 October 2013.

559. *ibidem*.

to a national average rate of 1.1 kg/ capita/ day) seeking its continuous reduction, taking into account the average per capita generation of each region of the country and local specificities;

4- Environmentally Adequate Final Disposition of Rejects: To eliminate controlled dumps and landfills and to promote Environmentally Adequate Final Disposition of Rejects, as established by law 12.305/2010 which created the National Policy on Solid Waste and its regulatory decree - Decree No 7.404/2010; To retrieve the dumps and controlled landfills, including assessment of their environmental conditions (stability, contamination of soil, surface and groundwater, migration of gases to the external mass of residues, etc. areas.); To create national index for evaluating the quality of landfills (SEQI); To develop technologies to reduce the final disposal in landfills.

Important to mention that the National Plan on Solid Residues maintains close connections with other national ones such as the Climate Change (NPCC), Water Resources (PNR), Sustainable Production and Consumption (PPCS) and also harmonises with the National Environmental Education and the proposal of the National Sanitation (PLANSAB) showing, thereby, the scope and complexity of the issue at hand.

Broadening the debate chronologically it is important mentioning that in 23rd November 2011 the federal government launched the Action Plan for Sustainable Production and Consumption (PPCS), a document published by the Ministry of Environment (and revised every four years) in collaboration with various sectors of society and which presents actions to be taken by all citizens in order to modify the output of industries, consumer habits and the final destination of residues, increasing recycling work and selective collection in the country.

Actions such as promoting sectoral agreements for reducing the use of plastic bags in supermarkets: The Brazilian Association of Supermarkets (ABRAS) signed a sectoral agreement with the Ministry of Environment, in the aim of the PPCS, which commits the sector to undertake actions to reduce by 30% the distribution of plastic bags in stores by 2013 and 40% by 2015. The basis for the calculation of the reduction was 2010, when there was a distribution of 14 billion plastic bags in Brazil.⁵⁶⁰

Among the goals for the first cycle of the PPCS (2011-2014) are: educating the population for sustainable consumption (educational campaigns), increasing recycling and the sustainable retail. The government should work from its own policies as well as sector partnerships with industry, business,

560. Brazilian Ministry of the Environment (MMA), Plano de Ação para Produção e Consumo Sustentáveis (23 November 2011) 34 <www.mma.gov.br/responsabilidade-socioambiental/producao-e-consumo-sustentavel/plano-nacional> accessed 22 October 2013.

and civil society.⁵⁶¹ According to the current Minister of Environment,⁵⁶² Izabella Teixeira, the PPCS proposal so far has been the basis for government's actions, as well as for productive sector and society, driving Brazil to more sustainable patterns of production and consumption. Moreover, the action plan counts with involvement of various sectors of the government itself, private sector, non-governmental organisations (NGOs) and citizens to encourage more efficient production and responsible consumption.

Initiatives such as agreements between the ministry of environment – through its Department of Water Resources and Urban Environment – and the government of each federal state are, in recent years, have become a much more efficient option. As the then Minister of Environment, Marina Silva put it:⁵⁶³

Previous efforts were inadequate resources and ended up going to waste. With this new concept of integrated management and consortia, now we walk toward a solution to the problem. Environment is the equation of this century, in which economic viability has to be equal to the environmental viability.⁵⁶⁴

In 2012, the first sectoral agreement for reverse logistics was signed between the Ministry of Environment and entities representing the sector of lubricating oil.⁵⁶⁵ Other forms of corporate action would be collection points for batteries and other hazardous residues; inner plans of solid residues management; stimulate the establishment of cooperatives of waste pickers for recyclable residues; social inclusion programmes, and developing products that consume fewer raw materials, biodegradable or reusable.

10.3 Remarks on the Implementation Process of the NPSW

For more than two decades now Brazil has been struggling with the challenge of regulating and implementing a National Policy on Solid Waste. The focus has been on recycling and reuse, as an influence of the low carbon and zero waste strategies rising worldwide. When the country was appointed to host

561. *ibidem* 7-8.

562. Juliana Andrade, 'Governo lança plano de produção e consumo sustentáveis' Notícias Políticas Ambientais Agência Brasil (Editora Abril 23 November 2011) <<http://planetasustentavel.abril.com.br/noticias/governo-lanca-plano-producao-consumo-sustentaveis-647255.shtml>> accessed 22 October 2013.

563. Nominated by President Luís Inácio Lula da Silva from 1 January 2003 to 13 May 2008.

564. O GLOBO, 'Governo do Rio assina convênios para projetos ambientais' (20 December 2007) <<http://g1.globo.com/Noticias/Rio/0,,MUL234662-5606,00-governo+do+rio+assina+convenios+para+projetos+ambientais.html>> accessed 17 October 2013.

565. Brazil, 'Relatório do Ministério do Meio Ambiente para o Conselho Nacional do Meio Ambiente' (MMA 2013) <www.mma.gov.br/port/conama/processos/174D441A/Apres_OLUC_Zilda.pdf> accessed 22 October 2013.

major international events – the World Cup (2014) and the Olympic Games (2016) – the responsibilities that come with such an honour helped put pressure for solutions to this challenge to be achieved more quickly. Countries which have previously hosted the same events – for example England and the London Olympics (2012) – have made considerable advances. To study their experience – and of others – is a great opportunity for learning new practices for water management, solid residues and sustainable environmental technologies.⁵⁶⁶

Examples of technologies that can reduce the environmental impacts are composting, solid waste digesters for organic and agro-forestry, and the use of biogas as a fuel for electricity generation. The National Policy on Solid Waste deals with a variety of public and private actors in different sectors but both, cities and businesses, only actually benefit if developing waste plans and forming consortiums. Public-private partnerships play a very important role for the improvement of recycling rates, managing the reverse logistics and ensuring social inclusion. Those actions, added to engagement for investments in the sector, could cause an impulse for more significant results. Also assessed by ABRELPE, from 2010 to 2014 the rhythm in which waste management has evolved in the country has been considerably slow. For some issues however, it has been stagnating. Such a slow process hinders the full implementation of the National Policy Law NPSW in times when waste production grows fast (29% in the same period) and still almost 10% of the population does not have access to collection of household waste.⁵⁶⁷

It is clear that the NPSW law presents basic guidelines that are still to be developed in the search for the solution of problems related to solid residues. Still, because such legal standards present only a basic structure for the establishment of the treatment and disposal system for solid residues, the concern is that once it does not provide for clear penalties or incentives to guarantee the principles and actions mentioned in it, will it really be effective? On this subject, authors Fernando Gabbi Polli and Alfeu de Arruda Souza wrote:

What can be seen are actually good intentions in the sense that, in the case of consumer relations, it is given due attention to solid residues inherent to commerce and services. No penalties are provided for those who break the norm, i.e. , there is no penalty or restraint to be applied in the cases of companies, manufacturers or traders who not developing, in a reasonable time, their service of collection and treatment of such solid residues. On the other hand, the existing legislation only offers financial incentives facilitations in funding for the development of private programmes for residues treatment. We believe that a way to encourage the development and execution of these policies

566. See footnote 532.

567. ABRELPE, *Panorama dos Resíduos Sólidos no Brasil 2014* (ABRELPE 2015) 114-115 <www.abrelpe.org.br> accessed 5 November 2013.

should undergo through a greater facilitation of benefits to be offered by the government. Thus, it is suggested that such laws start from two important points when to be created, which are: to penalize those who do not promote the collection and treatment of solid residues inherent to their product or operated services (they must offer the consumer a waste collection service); and the offer of tax incentives to companies that undertake these effective treatment of their residues services within a schedule to be submitted.⁵⁶⁸

When analysing the NPSW law as a whole, some authors⁵⁶⁹ have argued that it has not faced issues related to consumption, specifically with regard to the ongoing and constant stimulus to it. Rather, at times, NPSW seems to direct only to replace the way individuals present consumption, and not on the effective reflection on the act of consuming. In certain respects, the law turns precisely to stimulating market development, production and consumption, albeit recycled or recyclable materials.

In the NPSW law consumers are not provided as beneficiaries of any stimuli arising from the principle of the protective payee. The same situation is repeated in the Decree 7.404/2010 that regulates the NPSW. Although it refers to the consumer more closely, it only does it regarding the environmental education topic. As affirmed by author Márcio de Souza Bernardes:

In this sense, the effectiveness of NPSW shows is threatened by not addressing the issues that relate directly to the consumer - generator. The consumers are perhaps the greatest responsible for the production of Domestic Solid Residues and they only tend to increase their waste production. Therefore, a Solid Residues Policy elaborated under a systemic view should face the rampant marketing and production of wishes daily fulfilled by the contemporary media, driving individuals to consume more and in consequence to increasingly discard more products.⁵⁷⁰

Finally, concerning enhancements that could be made to the law, there is the discussion of including other consumer goods and related services in its Article 33 which would most certainly enable the Government to bring effectiveness to the National Policy on Solid Waste.

In sum, the timing presents a unique opportunity for there is legal support for the actions that are necessary to make changes possible, the dialogue between governments and private entities has never been so intense and positive and public and private investments are growing. There are already a few

568. Fernando Gabbi Polli and Alfeu de Arruda Souza, 'Relação de consumo e meio ambiente: proposta de responsabilização efetiva das fabricantes e comerciantes de bens e serviços pelo recolhimento dos resíduos sólidos dos produtos comercializados' (2013) 8 Revista Eletrônica do Curso de Direito da UFSM 185-194, 191-192.

569. Márcio de Souza Bernardes, 'Os desafios para efetivação da política nacional de resíduos sólidos frente a figura do consumidor-gerador' 8 Revista Eletrônica do Curso de Direito da UFSM (2013) 195-207, 206.

570. *ibidem* 205-206.

sectoral agreements for reverse logistics, as defined by the National Policy on Solid Waste, being establishment but there still is a long way to go. Based on the data disclosed herein, one comes to the conclusion that the country is evolving quite slowly in the establishment of a sustainable and integrated management of solid residues and in complying the determinations of the NPSW. However, it seems that despite being quite behind schedule, the country is on the right track. The current institutional framework does not present a very positive result despite the undergoing changes. Most municipal governments still lack technical and financial resources to solve the problems of solid residues management. Often, possibilities for establishing partnerships with sectors that should be involved in the management and the search for alternatives for the implementation of solutions are not known.

10.4 Brazilian Take-back Systems

10.4.1 Take back systems previous to the NPSW

In order to fully understand the Brazilian scenario concerning the regulation and implementation of the take-back systems specified in the NPSW (Law 12305/2010) it is necessary to observe which laws were already existing, regarding certain waste streams, prior to its coming into force. The relevance of observing pre-existing take-back systems is justified as they set the groundwork for the development of a legal structure – as well as for infrastructure – of further waste take-back systems in Brazil. Since the first system came to exist in 1989 – the year when the Federal Law for Pesticide containers was published – there have been a few years for industry and services to develop and establish the dynamics. It is expected that this has brought a culture and expertise on the matter none of which was previously available.

Some of the take-back systems were motivated by the drafting process of the National Policy on Solid Waste: since it took nearly two decades for the policy to become law – from 1999 until 2010 – national institutions such as CONAMA (National Council for Environment) was influenced at the early stages of the process and adopted a more concerned behaviour regarding regulation of solid residues issues. CONAMA had then driven its focus on residues originating from tires, batteries, lamps, medical services, and construction and demolition debris, among others. In this respect, the specific reverse logistics systems which have been deployed in Brazil previously to the NPSW will be briefly explained in this section.

i. Pesticide Containers

Brazil is one of the largest consumers of pesticides in the world which consequently leads to a large packaging waste generation. The considerable impacts caused by pesticide containers on human health and the environment motivated the set-up of laws to regulate, among other things, the disposal of empty containers of pesticides, providing conditions for the supervision of such processes and the establishment of rules for all the actors involved. In 1989, Federal Law 7.802⁵⁷¹ addressed the issues identifying pesticides as a product to which great care should be applied and specified many procedures for it to happen. The Federal Law 9.974/2000⁵⁷² and Decree 4.074/2002⁵⁷³ revised and altered 7.802/89, establishing shared responsibility among farmers, industry, distributors, sellers, cooperatives and government for pesticide containers to be properly disposed and treated. According to Article 14 when production, marketing, use, transport and disposal of empty pesticide containers, components and alike are not in conformity with the relevant legislation, administrative, civil and criminal liability for damages to human health and the environment fit to: a) professionals, when a wrong, careless or improper prescription is proven; b) the user or service provider, in the case he acts in disagreement with the prescription or the manufacturer's recommendations, and registrant and sanitary-environmental agencies; c) the merchant when making its sale without prescription or in disagreement with the recipe or recommendations of the manufacturer, and registrant and sanitary-environmental agencies; d) the registrant that, by intent or fault, omit information or provide incorrect information; e) the producer, when producing goods in disagreement with the specifications of the product registration, the label, the package leaflet, brochure and the advertising, or when he fails to allocate the empty containers in accordance with the relevant legislation; f) the employer, when not providing and not performing maintenance of the suitable equipment to protect the health of the workers or of the production, distribution, and application equipment. The amendments to the Federal Law 7.802/89 came into force in 2002 and are still valid to this day.

571. Brazil, Lei Nº 7.802, de 11 de julho de 1989. Diário Oficial, Brasília, DF, 12 jul. 1989, Seção 1, pp. 11459-11460. Provides for the research, experimentation, production, packaging and labeling, transportation, storage, marketing, commercial advertising, use, import, export, waste disposal of final residues and packaging, registration, classification, control, inspection and surveillance of pesticides, their components and alike, among other provisions.

572. Brazil, Lei Nº 9.974, de 6 de junho de 2000. Diário Oficial, Brasília, DF, Seção 1, No 109, 7 jun. 2000. Alters Law 7.802/1989.

573. Brazil, Decreto Nº 4.074, de 4 de janeiro de 2002. Diário Oficial, Brasília, DF, Seção 1 No 5, 8 jan. 2002. Regulates Law 7.082/1989.

ii. *Used or Contaminated Lubricating Oil (OLUC)*

Even though there have been laws approaching the need for lubricating oil to be sent for recycling ever since the 60's, it was only in 1991 that the shift on the debate focused on the need for an environmental oriented law on the topic. CONAMA Resolution No 9/1993⁵⁷⁴ was the outcome of such concern. The Resolution recognised the hazard that OLUC represented and the importance for it to be properly recycled, defining responsibilities for all actors involved. From Article 8 to Article 13, specific instructions were provided. Article 8 refers to producers obligations of producing reports on the amount of oil produced or imported, creating systems for collecting individuals' final disposal of non-recyclable lubricant oil, obtain IBAMA's approval to such systems; Article 9 concerns proper storage of used oils, information to be provided, registers of transactions, final disposal of contaminated used oils by generators of used oils; Article 10 specifies the obligations of receptors of used oils to alienate either the contaminated or the recyclable lubricant oils exclusively to the authorised collector or re-refiner, to inform the consumer, to provide systems or facilities for exchanging lubricating oils and storing used ones, to store used oils in a safe manner; Article 12 brings the obligations to collectors of used oils to recover all used or contaminated – yet recyclable – lubricating oils at the same time by providing a receipt (*nota fiscal*), to ensure that used lubricant oil does not get contaminated, to keep record of acquisitions and alienations, to be responsible for the final destination of used or non-recyclable contaminated lubricant oils once collected through authorised systems, to ensure that handling, transportation and transfer of used oil collected are performed under proper conditions; and Article 13 sets the obligations of re-refiners of waste oils to receive all used or recyclable lubricating oil exclusively from an authorised collector, to keep records of acquisitions and alienations, to be responsible for the final destination of non-recyclable used or contaminated oils. Article 17 states that failure to comply with the provisions of this resolution leads offenders to the penalties provided for in Law 6.938 of August 31, 1981 (establishing the National Environmental Policy) and its regulation by Decree 99.274, 06 June 1990. Further, Resolution No 9/1993 was replaced by CONAMA Resolution No 362/2005. The new Resolution, on its Article 3, established that all used or contaminated lubricating oil collected shall be recycled by the re-refining process, while Article 7 established that all producers and importers are responsible for collecting all OLUC or ensuring the financing of all collection. These resolutions represent the effect of joint efforts, a pioneer example, if not the only one, of convergence of opinions, attitudes and actions for effective political post-consumer lubricating oil management.

574. Brazil, Resolução CONAMA No 9 de 31 de agosto de 1993. Brings definitions and sets as mandatory the collection and proper disposal of all used or contaminated lubricating oil.

iii. *Tires*

On August 26, 1999, CONAMA Resolution No 258/99⁵⁷⁵ was approved and specified goals for collection and final environmentally correct recycling, treatment or reuse of tires. Even though there had been previous laws on the matter, it was only after Resolution 258/99 came into force that significant improvement occurred in the take-back system for tires in Brazil, and development of new technologies for reuse, recycling and energy recovery of tires took place. The Resolution made manufacturers and importers the ones responsible for providing a final destination for end-of-life tires as of 1st of January 2002, and distributors, resellers, and end-users reformers co-responsible for the collection of used tires. Prior to the approval of this legislation, only 10% of the tires were recycled. According to its Article 1, manufacturers and importers of tires are required to collect and to dispose, in an environmentally appropriate manner, existing waste tires in the country, in the defined proportion specified in this Resolution in respect of manufactured and/or imported quantities. While Article 11 states that distributors and resellers, and end users of tires, in conjunction with manufacturers, importers and public authorities should cooperate in adoption procedures, in order to implement the collection of existing waste tires in Brazil. The Normative Instruction No 008/02⁵⁷⁶ of the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) was published in 2002 to provide the necessary procedures for the registration of tire manufacturers and importers, as well as the registration of processors of tires, as predicted by Resolution No 258/99. After its approval, the number of companies registered for collection, reuse, recycling and energy recovery of tires reached 124 companies in 2010, against only 4 companies registered at IBAMA before 2002. However, an unknown number of companies operating in the informal market still remain. In 2009, CONAMA issued one more resolution, No 416/09⁵⁷⁷, which changed the formula for calculating the recycling of tires, to be sold in the replacement market, and has been recognised as an important measure for boosting this take-back system.⁵⁷⁸

575. Brazil, Resoluções CONAMA entre julho de 1984 a novembro de 2008, Resolução Nº 258 de 26 de agosto de 1999. The Resolution provides that manufacturers and importers of tires are required to collect and to dispose scrap tires in an environmentally sound way.

576. Brazil, Instrução Normativa IBAMA No 8, de 15 de maio de 2002. This resolution establishes within IBAMA, the necessary procedures for the performance of CONAMA Resolution No 258 of 26 August 1999, on the registration of manufacturers and importers of tires, as well as the registration of processors of tires.

577. Brazil, Resolução CONAMA No 416 de 30 de setembro de 2009. This Resolution provides for the prevention of environmental degradation caused by waste tires and their environmentally sound disposal, among other measures.

578. Carlos AF Lagarinhos and Jorge AS Tenório, 'Logística Reversa dos Pneus Usados no Brasil' (2013) 23(1) *Polímeros: Ciência e Tecnologia* 49-58, 56-57.

iv. *Batteries*

Concerned about the serious negative impacts that incorrect disposal of used batteries caused to the environment and human health, CONAMA wrote Resolution No 257 of June 30, 1999 which made mandatory used batteries to be returned to the manufacturer or importer for an adequate treatment to be performed. A new 'post-consumer' responsibility of the agents involved in these products production, import and marketing was established. The provisions contained in the Resolution applied to batteries containing lead, cadmium, mercury and compounds in its compositions (Article 2), as well as the electrical and electronic products containing those batteries integrated into its structure as a non-replaceable form. Article 3 defined that the establishments that sell the products described in Article 1 (batteries), as well as the network of authorised service by manufacturers and importers of these products are obliged to accept from users the return of used units, whose characteristics are similar to those marketed with views to the procedures referred to in Article 1 [reuse, recycling, treatment or proper final disposal]. Manufacturer and importer were then made responsible for the full cycle of their products. Article 15 named the bodies that comprise SISNAMA to be responsible for supervising that the instructions brought by the resolution are followed. In the case of failure to comply with the obligations set out in the Resolution, subject should be brought under the penalties provided for in the Laws 6.938 of August 31, 1981⁵⁷⁹ and 9.605 of February 12, 1998.⁵⁸⁰ CONAMA Resolution No 401/2008581 replaced No 257/1999 and brought further attention to waste batteries and specified clearer obligations for producers and importers to accomplish their responsibility to take-back the used batteries for which they are accountable. Deadlines for the implementation of collection, transport, recycling, reuse, treatment and final disposal of batteries were also established. Nonetheless, critiques are that no targets and no obligation for consumers to return their used batteries have been specified in the regulations so far, leading to less effective results.

579. Brazil, Lei Nº 6.938 de 31 de Agosto de 1981. As amended, it institutes the Brazilian environmental policy, as well as its purposes, regulations and enforcement.

580. Brazil, Lei Nº 9.605 de 12 de Fevereiro de 1998. It provides for criminal and administrative sanctions derived from conducts and activities harmful to the environment, among other provisions.

581. Brazil, Resolução CONAMA Nº 401 de 4 de novembro de 2008. Establishes the maximum limits of lead, cadmium and mercury in batteries sold in the country and the criteria and standards for their environmentally sound management, among other provisions. Diário Oficial, Brasília (DF), de 5 de novembro de 2008, 108.

10.4.2 Waste streams specified at the NPSW for take-back

When Brazil's first national waste management legislation was enacted in 2012, local and state authorities along with the industrial sector were given tasks and deadlines to approach the issue of developing a proper system for collecting and treating residues in its diverse forms. As discussed in the previous section, Article 33 brought by the National Policy on Solid Waste established the responsibilities of each of the actors involved and the waste streams to which those apply.

Nevertheless, at the time this Chapter was written⁵⁸² only a few of the Federal States and municipalities had enacted a specific regulation and taken actions concerning waste recycling, reuse, treatment and recovery of the streams focused by the NPSW. Political elections and different priorities listed on the agenda, and economic crisis have been a few of the reasons that have led to delays on negotiations. Some of the take-back systems have recently reached sectoral agreements and are beginning to be set up, others, as the one for WEEE face critical aspects still to be negotiated between industry and public authorities in order to their take-back systems to be fully and effectively working nation-wide. As it will be explained further, progress has been made on finding solutions for the critical points, nonetheless, there is a long path still left to be pursued.

Still in 2010, a few months after the publication of the NPSW, Decree No 7.404 created the Steering Committee for the Implementation of Reverse Logistics (CORI). CORI should, among others, promote the implementation of take-back systems for the waste streams specified on Article 33 of the NPSW. In order to coordinate the next actions necessary for achieving the implementation of the reverse logistics systems, CORI had its structure and competences set by Ordinance No 113 by the Minister of Environment.⁵⁸³ The structure brought the possibility for technical groups to be created seeking to achieve faster and more specific results on evaluating possibilities for each of the waste streams designated (Article 4). Five thematic discussion groups for waste disposal were created on 5 May 2011, as part of CORI. The discussion groups were named Technical Working Groups (GTT) and included representatives from producers, recyclers, and major retailers. Each GTT had the purpose to design its own legal sectoral agreement – which later should be approved by the Minister of the Environment – and for that, it should lay down conditions, targets and obligations to manufacturers, retail-

582. This chapter was finished in May 2016. Eventual updates and revisions were included until 1 June 2016.

583. Brazil, Ministério do Meio Ambiente, Portaria N° 113, de 8 de Abril de 2011. It approved bylaws for the Steering Committee for the Implementation of Take-back Systems. *Diário Oficial da União*, Brasília (DF), 11 de abril de 2011, 69.

ers, and importers on what concerns the implementation of a take-back system to each of the five waste streams specified:

- GTT01 - Disposal of Medicines (closed on 18 Sep. 2012)⁵⁸⁴
- GTT02 - Packaging in General (closed on 20 Mar. 2012)
- GTT 03 - Packaging of Lubricating Oils and their Residues (closed on 20 Jun. 2011)
- GTT04 - Electrical and Electronic Equipment (closed on 24 Oct. 2012)
- GTT05 - Fluorescent, Sodium, Mercury, Vapour and Mixed Bulbs (closed on 20 Sep. 2011).

The Technical Working Groups organised meetings and studies focusing on the relevant topics for gathering the necessary information for the establishment of a legal sectoral agreement: collection of subsidies to carry out technical and economic feasibility studies for the implementation of reverse logistics systems, also known as ‘take-back systems’, the preparation of a possible model for reverse logistics of waste electrical and electronic equipment, and the elaboration of a draft for a public call for the convening of sectoral agreements. After CORI’s approval of the technical and economic feasibility for the implementation of a take-back system of a given waste stream, the next phase was a public call for proposals for a sectoral agreement. This public act stood as a necessary step for the preparatory work of the sectoral agreements to begin.

By 2012 all GTTs completed their work and produced public calls for proposals for sectoral agreements to be presented. The sectoral agreements that have been reached so far – December 2015 – with the purpose of developing specific take-back systems to be structured and implemented are displayed in the next table.

584. Even though the NPSW listed in its Article 33 only six groups of products to develop and implement take-back systems – pesticides and containers, batteries, tires, lubricating oils and containers, lamps, electro-electronic equipment – producers, importers and distributors of other products, as medicines have been working on a voluntary basis to develop and implement take-back systems as well.

Table 10.1 Waste Streams and their Take-back System: Current Situation

Take-back Systems in Development	
Waste Streams	Present Situation
Disposal of Medicines	Three proposals for sectoral agreement were presented until its deadline in April 2014. Currently in the phase of negotiation. Next phase: public consultation.
Packaging in general	Four proposals for sectoral agreement were presented between December 2012 and January 2013. Three proposals were considered valid for the negotiation phase. The public consultation ended on 20.11.2014. Currently in the phase of revision.
Packaging of lubricating oils and their residues	A sectoral agreement was signed on 19.12.2012 and published on 07.02.2013. This is the first reverse logistics system set up in the context of the National Policy on Solid Waste (NPSW). ⁵⁸⁵
Electrical and Electronic Equipment	Ten proposals for sectoral agreement were received until its deadline in June 2013. Four proposals were considered valid for the negotiation phase. A unified proposal has been presented in January 2014. Currently in the phase of negotiation. Next phase: public consultation.
Fluorescent bulbs, sodium and mercury vapor bulbs and mixed bulbs	Two proposals for sectoral agreement were presented until its deadline in November 2012. A unified proposal has been presented in 2013. The public consultation ended on 15.10.2014. Sectoral agreement signed on 27.11.2014 and published on 12.03.2015.

Not only sectoral agreements, but also federal legislation issued by the executive power, and terms of appointment add as the three forms of legal instruments that have been authorised to set the necessary procedures and for reverse logistics systems (art. 15 of the Decree). For its participatory character involving companies, population and government in debating and constructing such legal instrument, the sectoral agreements, have been privileged by the Steering Committee for the implementation of reverse logistics system. For this reason, and given that earlier in this chapter the three instruments have already been explained, in this section a closer look will be directed at Sectoral Agreements.

585. More information on the Sectoral Agreement on Packaging of Lubricating Oils and their Residues is available at <www.sinir.gov.br/web/guest/acordo-setorial-para-implantacao-de-sistema-de-logistica-reversa-de-embalagens-plasticas-de-oleo-lubrificante> accessed 12 November 2015.

By definition, sectoral agreements are ‘acts of contractual legal nature, signed between Government and manufacturers, importers, distributors or retailers, aiming at the implementation of shared responsibility on the product life-cycle’.⁵⁸⁶ In the case of sectoral agreements, it is mandatory to perform public consultation and feasibility studies, among others. The coverage of a sectoral agreement must be national and involve the participation of all stakeholders, which leads to one of the concerns that is currently being discussed between industry, commerce and Government: Article 19 of the Decree brings a major difficulty, once it leads to the understanding that each of the actors part of a product life cycle must sign the agreement in order to become legally responsible for the take-back system. If one of the actors, for instance, does not sign the sectoral agreement alleging that they have developed a different system (when in fact might be untrue), when possibly nothing has been arranged, could lead to ‘free-riders’. This will be discussed further, along with the other difficulties that need to be overcome for the signature of an agreement.

In the case of residues that require reverse logistics under Brazilian law, there are several obligations for the supply chain (manufacturers, importers, distributors and traders), as dissemination of information on how to avoid, recycle, and eliminate waste associated with their products, as well as the collection of products and remaining waste after use, and also the obligation to dispose in an environmentally appropriate way. In this case, the appointed supply chain is required to design and implement reverse logistics systems so that the return of post-consumer products be given independently of public service of urban cleaning and solid waste management.⁵⁸⁷

The law stipulates that professional categories are covered by the shared responsibility: manufacturers, importers, distributors and traders (Article 31). The responsibility of these professionals includes:

- a) Investment in development, investment in manufacturing and investment in product placement: in such a way that the products are fit for use by the consumer, re-use, recycling or another form of environmentally appropriate disposal. Even though Article 31 did not specify the amount of investment to be made nor a deadline for those actions to be taken, the doctrinaire Paulo Affonso Machado explains it to a responsibility of these professionals to prove that the investment is being made. A new aspect implied by responsibility is that the investment is also intended for manufacturing and product use which generates the least amount of waste possible. In the case these professionals do not prove these two types of investment to have been made, the product cannot have its pro-

586. Brazil 2010b (n 548) Article 19.

587. Patrícia Faga Iglecias Lemos, *Resíduos sólidos e responsabilidade civil pós-consumo* (Revista dos Tribunais 2012) 107.

duction and consumption granted by the competent authority and, if those had been granted, the environmental permit should be annulled

- b) Disclosure of information about solid waste regarding ways to prevent, recycle and eliminate waste associated with their respective products
- c) Disposal of products and remaining residues after use, as well as its subsequent environmentally appropriate disposal, in the case of end-of-life products specified for reverse logistics system according to Article 33. The collection of the products can be understood as the behaviour of having these products in custody. In section III of Article 31 is not explicit if the conduct of collecting implies the pickup of the products, or it refers to only receive them back, or both.⁵⁸⁸

10.5 Negotiations of the Sectoral Agreement for (W)EEE

After the GTT on electrical and electronic equipment was closed, CORI had enough information to take its decision to approve the technical and economic viability for the implementation of the reverse logistics for WEEE on 19 December 2012.⁵⁸⁹ With CORI's decision on the matter, a public call could be elaborated and published by the Ministry of Environment on 13 February 2013.⁵⁹⁰ The call informed the deadline of 13 June 2014 for all proposals for the Sectoral Agreement to be delivered. By the end of 2013, eleven proposals were presented from which only four were according to the specifications needed.

The content or authorship of the proposals have not been made public, however, based on interviews with representatives⁵⁹¹ from the electric electronics industry, it is known that once noticing the proposals suggested two different agreements that would divide the big appliances on one side and the small appliances on the other, the Ministry of Environment requested for a unified proposal to be presented for all products. Later in early 2014, a unified proposal was presented. Along with the proposal, the actors who will share responsibility on the financing and set-up of the WEEE system (producers, importers, distributors and retailers) presented a list of important matters to which solutions from the government are necessary, previous to the signature of the agreement.

588. Paulo Affonso Leme Machado, *Direito Ambiental Brasileiro* (Malheiros 2013) 652.

589. Brazilian Ministry of the Environment (MMA), Comitê Orientador para a Implementação de Sistemas de Logística Reversa. Deliberação Nº 7, de 19 de dezembro de 2012. Resenha D.O.U., 3 jan. 2013, Seção 1, 173.

590. Brazilian Ministry of the Environment (MMA), Secretaria de Recursos Hídricos e Ambiente Urbano, Chamamento para a Elaboração de Acordo Setorial para a Implantação de Sistema de Logística Reversa de Produtos Eletroeletrônicos e seus Componentes (Edital Nº 01/2013), 13 de fevereiro de 2013.

591. ABINEE and ABRELPE.

While the actors are finally coming to an agreement among themselves, the government solutions to the problems that have been presented are still lacking in order to sign the sectoral agreement and the set-up of a WEEE take-back system to happen. The problems that lead to a delay on the creation of the take back system are mostly involved with the need for procedures, documents, and roles (rights and responsibilities) to be specified into legislation. The fact that other ministries must be involved, since the topics approached go beyond the competence of the Ministry of Environment, has increased the time for the negotiations even further.

The meetings that brought together representatives of the actors made responsible for organising and financing the system resulted in a six-point-document that has been presented to the Federal Government at the beginning of 2014. The issues that have been raised are:

1. The need to establish an agency (governance agency) responsible for registering the producers and importers and for controlling the products that are placed on the market in order to define the goals for each of the producers/importers according to such control
2. Clear definition of end-of-life electrical and electronic equipment as a non-hazardous type of waste (still not made clear by any of the existing regulations)
3. Establishment of a self-declaratory document for cargo transportation valid across the country. The document must inform the type and origin of the cargo and replace the need for any other documents for transportation matters
4. Clear definition that the disposal of end-of-life electrical and electronic equipment necessarily implies the loss of property
5. Once the Sectoral Agreement is signed it must be legally binding to all actors configuring at EEEs life-cycle. Due to the specific features of an Agreement – it is applicable only to the ones that have signed it – the producers, importers, distributors or retailers that do not sign it, would be free from the obligations (under the excuse that they perform or are developing a different system to perform the take-back. According to the interpretation of the NPSW, however, all actors that are involved in the WEEE take-back system have been defined as responsible for sharing responsibility on the WEEE system, for this reason the understanding that a Sectoral Agreement would legally bind all to one system
6. Financial participation of consumers to finance the take-back system (under consideration). If that is the case, a certain amount is to be specified on each receipt and it will be a tax-free amount. Instru-

ments and mechanisms for compensation and financing of orphan WEEE also must be considered.⁵⁹²

During the year of 2014, the negotiations with the different ministries were scarce, proving to be an unproductive year. The process was intensified in 2015, when several encounters between the different ministries involved and representatives of industry, importers, and commerce reached concrete advances, leading to a positive prospection for the sectoral agreement to be signed by mid-2016.

According to the last updates on the negotiations obtained during interviews with the Brazilian Electrical and Electronics Industry Association (ABINEE),⁵⁹³ the first issue – creation of a governance agency – has been considered by the actors involved in the e-waste take-back as a viable decision in order to organise and distribute the responsibilities. Another part of this structure is the one represented by the management agencies. Recently ABINEE has set up a management agency for small appliances to add to the already existing one created by ELETROS for big appliances.⁵⁹⁴

The second point – WEEE definition as a non-hazardous type of waste – needs negotiation with the Ministry of Environment and, more specifically, IBAMA. The issue is related to what has been defined on NBR 10004, where all industrialised goods were classified as ‘hazardous’. The implication of such a general classification to all industrialised goods is a high increase in the costs, and paperwork, of the entire take-back system for WEEE. It is also worth noting that the NBR 10004 was created with the purpose of classifying industrial residues and not the ones generated by commerce/consumers. The collection of hazardous waste, according to IBAMA, needs a specific license to each of the collection points. A specific license is needed for each piece of cargo transported. A viable solution that is being considered is for WEEE to be interpret as hazardous from the moment it is disassembled at the recycling or recovery plants.

592. According to information published at ABINEE’s official journal as the proposal itself has not been made public and could not be accessed for the purposes of this research. ABINEE, ‘ABINEE, Logística Reversa’ (Revista ABINEE No 75, março 2014) 18-21 <www.abinee.org.br/informac/revista.htm> accessed 15 April 2014. ABINEE is a not-for-profit organisation that represents the Brazilian electrical and electronic industrial sector. The organisation has been leading the negotiations process for a sectoral agreement.

593. Official information obtained through interviews with the representative of the leading organisation for the negotiations. Interview with Henrique Mendes, ABINEE (Skype video call 04 December 2015).

594. In Portuguese, *Associação Nacional de Fabricantes de Produtos Eletroeletrônicos (ELETROS)*. ELETROS – a national association of manufacturers of electrical and electronic equipment – brings together the largest manufacturers of household appliances and consumer electronics in Brazil. There are 31 member companies representing leading brands of white goods segments, audio and video (brown line) and line of portable. See more at <www.eletros.org.br>.

The third point – the need for a self-declaratory document for cargo transportation of WEEE – has been presented to the Ministry of Finance. The rather autonomous position enjoyed by each of the federal States was explained earlier in chapter 9 about the Brazilian form of State as a Federative Republic. Such autonomy also extends to taxes and fees, including transport of WEEE across states. If WEEE is not clearly labelled under a simplified document when sent as cargo – a simplified document which does not apply for taxes payment – the costs from transporting WEEE from north region to southeast region would reach extremely high figures, preventing, undoubtedly, the success of the system. Possibly, a solution can be reached by means of an agreement between each of the States and the National Council for Financial Policy (CONFAZ)⁵⁹⁵ in order to WEEE as a cargo to be recognised as ‘electronic scrap’ (no value cargo therefore) and the same document would be accepted throughout the entire country.

The fourth point – implication of property loss once WEEE is discarded – is being discussed in the Ministry of Justice, at the National Consumer Bureau (SENACON),⁵⁹⁶ where an official declaration is being considered to be published to highlight the implications of property loss once the owner dispose the end-of-life EEE, as well as the need for consumers to fulfil their duty of disposing their end-of-life EEE according to the take-back system to be set up. Initially, industry was aiming for new legislation to regulate this topic of their concern, given that the consumer laws are quite strict in Brazil and can lead to unfavourable situations for industry, however, further analysis of the Civil Code seem to have identified Article 1.275⁵⁹⁷ to be adequate for ensuring the loss of property and protecting industry and other actors responsible for the take-back system from consumers that eventually decide to reclaim their EEE after they have been disposed of for the take-back system.

The fifth point – sectoral agreement legally binding to all – is also being discussed with the Ministry of Environment as an ideal solution for the ones responsible for developing the take-back system for WEEE would be a Decree from the Ministry to bring isonomy to all the ones responsible for the take-back, according to the NPSW. A new Decree to complement what has been identified as a flaw of the regulating Decree 7.404 regulating the NPSW has been proposed as an ideal solution. While at the NPSW the only specific

595. In Portuguese, *Conselho Nacional de Política Fazendária (CONFAZ)*. The National Council for Financial Policy is a deliberative body established as a result of provisions in the Federal Constitution. Its main mission is to promote the improvement of fiscal federalism and tax harmonisation between the states of the Brazilian federation.

596. In Portuguese, *Secretaria Nacional do Consumidor (SENACON)*.

597. Brazil, Lei Nº 10.406 de 10 de janeiro de 2002. It establishes the current Civil Code in Brazil. Art. 1.275: In addition to the claims considered in this Code, one loses property over his possessions: I - by sale; II - on waiver; III - on abandonment; IV - by perishing of the thing; V - for expropriation.

responsibility to producers, importers and distributors was to establish a take-back system, the targets will be specified only at the sectoral agreement. Given the nature of the sectoral agreement, only the ones who signed are legally bound to it. A Decree defining that, for purposes of take-back systems for priority waste streams, all players specified as responsible in the NPSW also are legally bound to the sectoral agreement once it is signed is what would bring security for the implementation process.

The sixth point – financial participation of consumers – currently is the furthest point in the negotiations. In Brazil, the tax system is extremely complicated, and all players from consumers to producers already pay one of the highest tax burdens worldwide. Many of the fees and taxes are partially repeated within other fees and taxes, a phenomenon known as cumulative multi-stage taxes, all leading to slow progress on the topic. The need for a tax reform in the country and the political crisis it has been experiencing for the last two years are factors that add to the problem. Nonetheless, the need for a fee – to which no tax would be imposed – is being discussed in the Ministry of Finance. The other option considered by industry instead of a visible fee has been a support from the government, which could be tax or fees reductions.

Currently, the main difficulty for implementing national waste policy, the economic question of the model, or simply ‘who pays the bill,’ needs detailing. It is necessary that the individual responsibility of each entity that is part of the chain to be defined and specified in detail.

10.6 Conclusions on the Brazilian scenario for WEEE system

Brazilians throw away 76 million tonnes of waste of which at least 30% could be reused. According to ABRELPE, in 2014 only 3% of the 78,6 million tonnes of waste go to recycling. Between 2004 and 2014, the number of municipalities that have implemented recycling programmes increased from 81 to 927. Despite of the high figures, the increase represents only 17% of cities. The city of Curitiba currently presents the best recycling programme in the country where out of the more than 1500 tonnes of waste produced per day, 110 tonnes are recyclable and almost 70% are reused.⁵⁹⁸

The clear acceleration of the obsolescence rate in the electric-electronics sectoral is a fact which inspires concerns and might need regulation in the near future. There are still great difficulties on having manufactures having their EEE produced in such a way that take possibilities for reuse and recycling into account. The fact that products have been projected to last a specific amount of time and be subsequently disposed has been already reported by

598. ABRELPE, ‘Panorama dos Resíduos Sólidos no Brasil 2014’ (2015) <www.abrelpe.org.br/panorama_edicoes.cfm> accessed 20 January 2016.

Kang and Schoenung. Their study focused on U.S. infrastructure and technology options concerning electronic waste recycling. One of the observations made by the research referred to personal computers (PCs) and the fact that due to high innovation rates their average lifespan had fallen from 4.5 years in 1992 to only two years in 2006.⁵⁹⁹

How far should producer responsibility go concerning the obligation to pick up the residue at the collection point and on developing the take-back system for WEEE? How far will the responsibility of distributors and consumers extend when it comes to disposal of end-of-life EEE? How much should be collected? How about treated, recycled, recovered or reused? Those are some of the questions that have been raised by the different actors⁶⁰⁰ involved, and to which answers are long awaited in order for a sectoral agreement and; eventually; a real nation-wide take-back system for e-waste to be built.

As it has been pointed out by different authors,⁶⁰¹ even though for decades now, the concern of protecting the environment – including observing the importance of treating waste – has had a place at the Brazilian legislation, for many occasions, these laws were not effective. A considerable part of the problem is the fact that besides being drafted and published, most laws need to be regulated. The reason is that once a new law is created, the provisions elaborated by the legislator often expect that practical relevant details for its application will be specified by the Executive Power by means of a Decree.

What this research has observed from the delays and uncertainties in this process added to what has been repeated during the interviews⁶⁰² taken with different authorities is that, in Brazil, more often than one would expect, laws lack specific deadlines and sanctions to be applied in the case they are not regulated. This, added to an overload of legal instruments depending on regu-

599. Hai-Yong Kang and Julie M Schoenung, 'Electronic waste recycling: A review of U.S. infrastructure and technology options' (2005) 45(4) *Resources, Conservation and Recycling* 368-400, 370.

600. Zilda Veloso, Director of the Department of Urban Environment (DAU) of the Ministry of Environment (MMA).

601. See Miguel Reale, respectful Brazilian jurist, '(...) an unregulated law, despite the regulation therein, finds itself lacking of effectiveness. Any act based on it incurs unconstitutional since in order to exist it has injured two constitutional principles: that no one shall be compelled to do or to refrain from doing something, except by virtue of a valid, effective law' (Federal Constitution, Art. 5, LIV). Also Amauri Montanhero, Manoel de Paula and Thiago Luiz, 'Óleos Lubrificantes e os mecanismos de logística reversa' in Arnaldo Jardim and Consuelo Yoshida, *Política Nacional de Gestão e Gerenciamento de Resíduos Sólidos* (Manole 2012) 638.

602. Interviews have been performed in a qualitative way, seeking to obtain further details on discussions that are not always made public. Key institutions such as the following have been consulted: Secretariat for the Environment – State of Sao Paulo (SMA), Patrícia Iglesias; the City Planning and Environment Prosecutors Office – State of Sao Paulo, José Eduardo Lutti; the Brazilian Electrical and Electronics Industry Association (ABINEE), Ademir Brescansin; and a Recycler Company Reciclo Metais, Marcus Oliveira.

lation to be issued by the Executive Power, leads to an accumulation of unregulated laws, which thus are not effectively applied.

Specifically with respect to waste laws, many problems clearly add to the already complicated formula: the shy – if not non-existent – involvement of end-users or consumers in participating in the dynamics of the take-back systems; and the lack of clear roles, targets and deadlines (above all, feasible deadlines). Those have been identified to be among the major problems affecting the success of this legislation when interviewing the actors involved in the discussions for the new WEEE system and once comparing the successful instruments in the European model that have been identified along this research and will be discussed in the next chapters.

In order for speeding this delayed process, a much deeper integration among industry, government and citizens, added to an effective inclusion of all types of waste in the recycling take-back systems, must occur. Also to be taken into consideration is the ABRELPE's president Carlos Silva Filho view from July 2015, at the occasion of the publication of the latest year report on Brazilian Solid Residues. It summarised what should be of concern to all actors in Brazil: between 2010 and 2014, years under the influence of the NPSW, generation of residues in the country increased 10,36%. The policy is not being effectively applied nor developed as still remains the combination of lack of engagement of citizens, industry, commerce, and government and lack of political will from municipal authorities, which leads to scarce financial resources, and low technical capacity for developing solutions to the technical problems rising on the way. He declared it as of being of no use to postpone deadlines, such as the closure of dumps and construction of proper landfills (due to August 2014) or even the presentation of the waste plans (due to August 2012). What is needed is to turn this undermining combination of factors and turn around the situation. Postponing or overlooking the deadlines brought by the NPSW will most likely only turn the already existing environmental problems of water and soil contamination, as well as human health damages, into even greater and more complicated ones.⁶⁰³

Throughout the years, prior to the NPSW a few of the federal States have had the initiative to create laws applicable to their region to stress and regulate recycling of material as part of their State Policy on Solid Waste, as seen on Chapter 9 such as the states of São Paulo (SP), Mato Grosso (MT), Paraná (PR) and Pará (PA). At the same time, other States are currently in the process of drafting legislation on the matter. Simultaneously, different private initiatives are starting companies specialised in disassembling and recovery of WEEE. Businesses and environmental groups have been performing and

603. Agência Brasil, 'Política de Resíduos Sólidos não avançou na gestão do lixo, avalia ABRELPE' Repórter Camila Maciel (27 July 2015) <www.ebc.com.br/noticias/2015/07/politica-de-residuos-solidos-nao-avancou-na-gestao-do-lixo-avalia-abrelpe> accessed 28 December 2015.

motivating the collection of WEEE by collection campaigns and projects. Even so, it is undeniable that a clear strong structure set up at a proper scale is lacking in order to provide the solutions to improper disposal of WEEE. However, by the time this research has been concluded was so far no regulation at a national level for the treatment of WEEE in Brazil as the sectoral agreement that shall bring this set of rules has not yet been signed.

PART V

Conclusions and Recommendations

Conclusions and Recommendations

11.1 Introduction

In this work, the analysis of the structure of the WEEE Directives and their implementation into the Member States evidenced visible improvements in tackling the European e-waste problem. The instruments and concepts brought forward by the Directives created and regulated a system for collection and treatment of WEEE that noticeably increased the rates when compared to a previous situation. First of all, to consider the European model as a source of inspiration to Brazilian law, the theory of legal transplants had to be introduced and discussed. It was important to understand how legal transplants can occur (or indeed not) and which conditions are necessary to be present. In addition to the study of the WEEE Directives, this research proposed a more attentive look: to observe case studies and identify variations of the application of the Directives. The intention was to learn from the European process of developing and implementing legal rules, instruments and concepts that have been applied into different contexts (as MS differ greatly). Once the European model was studied, the aim was then to provide recommendations which are compatible to the Brazilian legal framework and are likely to succeed in contributing to a further development in this legal field. The Brazilian scenario also was analysed, and its specificities taken into consideration and explained earlier during this work.

As demonstrated in chapter 2, there is considerable disagreement on the possibility for legal transplants to occur. Opinions on the topic vary according to the author's understanding of law, jurisdiction, society, and legal transplants (and which elements must be necessarily present for a legal transplant to exist). Due to this variation on which are the essential elements and how key concepts are defined, the perception of how successful a legal transfer has been, or even if it has existed at all, also varies. Despite the extensive and yet unsettled scholarship debate, the literature supporting the existence of legal transplants provides enough arguments to consider their occurrence and capability of contributing to the enhancement of another jurisdiction. This is understood under the borrowing process in the set of possibilities discussed in the same chapter. Therefore, it could be learned from part of the main literature on this theory that there is the possibility for processes of borrows of laws to occur and to be successful. It is feasible that jurisdiction uses legal

instruments from another in order to further develop its own laws. According to this mainstream, the practice of legal transplants has long been used as a means of accelerating, improving, or simply inspiring new laws on different legal systems. Consequently, to learn if and how Brazilian legislation can be improved, one could look for similar legislation in other legal frameworks. The European Directives on WEEE were chosen for this study due to the high standards set out in Europe and its tradition of strongly focusing on waste management policies as a key strategy for actions to protect the environment. The proximity of legal and economic systems, denominator of western society, administrative structures among other ones represent a 'minimum common', which has been established and analysed in chapter 2 and interpreted as equally able to provide success in a legal transplant from EU law to Brazilian law in similar levels to EU law and national legal systems of its diverse member states.

In sum, the aim of this research was to evaluate the European model of developing and implementing successful WEEE systems and to learn which legal instruments, processes, policies and strategies are relevant and applicable to contribute to Brazilian Law. With this goal in mind, the book is structured with a first part that introduces the research approach, including the research design, methods and the chosen theoretical framework. Legal transplants theory and its nuances are explained as well as the argument for the possibility of borrowing from the European Legal Framework based on the aspects there developed. The second part approaches the European Legal Framework and policies on waste, including the process of discussing and drafting the WEEE Directives. The third part investigates the national implementation of the WEEE Directives with the help of study cases. The fourth part looks into the Brazilian context and current developments on the topic. Considering that over the past few years the country has increased its concern towards waste management culminating in the enactment of Federal Law 12.305 in 2010 – an institutionalisation of its national policy for solid waste which established WEEE as one of the target waste streams for the set-up of take-back systems – interesting observations could be made. Finally, having analysed the implementation process of the WEEE Directives a satisfactory understanding was reached and, at the last stage of the research, the fifth part of the book points out legal instruments and policy choices from the European model that, if transplanted, are likely to bring developments also to the Brazilian legal framework.

This concluding chapter is a summary of the findings discussed previous in this work, as a result to the raised research question 'Have the European Directives for WEEE contributed to reducing the e-waste management problems in its Member States?', sub-question 'which instruments used by the WEEE Directives seem to have had the most beneficial results?', and sub-question 'how has Brazil regulated the WEEE management problem so far?'. At the same time, this chapter develops further on the outcome of the sub-

question ‘which provisions brought by the European WEEE Directives could be used as a source of inspiration in the Brazilian scenario?’ Given the logical order of the questions, the research question and the two initial sub-questions were approached prior to the third sub-question as answers to them represented essential information needed for conclusions and recommendations to be made from the European model to the on-going development of legal rules for a proper take-back system for waste electrical and electronic equipment in Brazil.

11.2 Challenges faced within the EU: Learning from the Pitfalls

In this work the successes and pitfalls of the national WEEE systems in Europe were analysed both from the perspective of the evolution of the WEEE Directives and the national implementation reports so that the European legal structure for e-waste management could be fully understood. Nonetheless, to fully understand the evolution of the WEEE Directives it is crucial to observe the European waste policies. Chapter 3 considered the Waste Framework in the EU and its structuring policies and legislation. The chapter followed on clarifying how those complement each other and support the WEEE Directives. As mentioned then, the report over the waste management performance of the 27 EU Member States at that time evidenced a ranking with very distinct results: on one side countries with comprehensive waste collection systems, high treatment capacity and small figures for landfilled waste. On the other side, countries struggling to reach the minimum targets, with poor waste prevention policies, inadequate waste infrastructure, lack of incentives, etc.⁶⁰⁴

Within the specific context of e-waste management and the set-up for its legal framework and system, the pioneering WEEE Directive of 2002 has also seen unequal results. The Directive specified concepts and instruments to be adopted by all MS for the establishment of formal take-back systems and required the registration of all firms putting EEE on the EU market and, at the same time, imposed the formal collection and treatment of all WEEE. The process of implementing European Directives gives room for national governments to choose for different paths, as long as the result is according to what it has been stipulated. However, not only the choices for implementation varied, but also Member States’ performances were noted to be considerably heterogeneous. Generally speaking, the performances were limited by a lack of good quality data and comprehensive systemic thinking considering that a wide range of players actually participate in the collection, logistics,

604. BIO Intelligence Service, ‘Implementing EU Waste Legislation for Green Growth: Final report prepared for European Commission DG Environment’ (29 November 2011) 48-52 <<http://ec.europa.eu/environment/waste/studies/>> accessed 5 March 2014.

recycling, auditing and financing of WEEE.⁶⁰⁵ Having in mind the interest of this research in using the European model as inspiration to Brazilian law, and with the glasses of the legal transplants theory, a special attention was given to these pitfalls. In a first level, there is a main observation to be made: that this main legal rule was structured in such a fashion that it could be established for a diverse group of States and still be applicable without major difficulties. In a second level: the first WEEE Directive had room for improvements since general and specific needs arose during the implementation process of the MS.

With regard to the difficulties in implementing the WEEE Directive, those mostly resulted from both structural and administrative barriers to an appropriate implementation. The main barriers to full implementation and enforcement of the waste legislation across all Directives related could be summarised as:⁶⁰⁶

- Lack of interest and/or resources
- Fear of high costs, lack of awareness of potential economic/financial/social benefits
- Inadequacy of waste management structures
- Complexity of the institutions: multi-level governments
- Diffusion of responsibility for waste management
- Environmental authorities do not have the ‘power’ needed to tackle criminal offences
- Constitutional constraints
- Local particular situations
- Special issue: criminal activities counteracting implementation
- Lack of clarity classifying treatment operations for ‘recycling’, ‘recovery’ and ‘disposal’.⁶⁰⁷

To the obstacles at hand certainly a broad range of possible solutions could be named, but to focus on the key challenges concerning the implementation and enforcement of waste laws, a list of priority actions are highlighted. These actions focus on the fields of enforcement (implementation) and communication (raising awareness).

605. Jaco Huisman, ‘Improving e-waste policies: The role of post-normal indicators’ (9th Conference of the European Society for Ecological Economics, Istanbul, 14 – 17 June 2011) 2 <www.researchgate.net/publication/236838734_Improving_e-waste_policies_The_role_of_post-normal_indicators> accessed 14 March 2015.

606. BIO Intelligence Service 2011a (n 604).

607. BIO Intelligence Service, ‘Study on coherence of waste legislation: Final report prepared for the European Commission DG Environment’ (11 August 2011) 75-77 <<http://ec.europa.eu/environment/waste/studies/>> accessed 5 March 2014.

Enforcement

- Exploration of tools for increasing enforcement to ensure MS compliance
- Better monitoring of MS waste management plans by the Commission to ensure appropriateness
- Inspections on the compliance of recycled materials with regard to allowable levels of hazardous substances.

Communication

- Communication campaigns to encourage participation by consumers, including making consumers aware of negative impacts
- Measures to improve local authorities' awareness and understanding of the latest developments in sorting, separation and end-of-life options for waste streams
- Encouraging sharing of best practices across MS.

A deeper emphasis on waste prevention and product design in the waste legislation adds in as one more crucial action, according to the Implementing EU Waste Legislation for Green Growth Final Report.⁶⁰⁸ Additionally, the need to better integrate Eco design requirements, to further specify improved end-of-life results, and to include additional provisions concerning the quality of separate collection, treatment operations and recyclates produced have been stressed as significant drivers for increased recycling. Fortunately, the flexibility and adaptability of the waste stream Directives, legislative options to integrate conceptual changes such as waste hierarchy, lifecycle thinking, resource efficiency and Eco design into the recycling legislation are most likely to be adequately addressed.⁶⁰⁹

11.3 European Waste Policies supporting the WEEE Directives: General Recommendations to Brazil

Already recognised in a communication from 30 July 1996 the European Commission declared: 'Waste management concerns have to be fully taken into account from the product's design or conception phase. To be effective, it implies that action is necessary at all stages of a product's life cycle: from production, through use to collection, re-use, and recycling up until its final disposal'.⁶¹⁰

608. BIO Intelligence Service 2011a (n 604).

609. BIO Intelligence Service 2011b (n 607) 111-112.

610. Commission of the European Communities, Communication from the Commission on the review of the Community Strategy for Waste Management COM(96)399 final, 30.07.1996, 7. In September 1989, the Commission made a Communication to the Council and to the European Parliament on a Community strategy for waste management (SEC(89) 934 final of 18. 9.89). Council and Parliament approved this strategy in their respective Resolutions of 7 May 1990 (OJ C 122/2, 18.5.90) and 19 February 1991(OJ C 72/34, 18.3.91). Further-

The European Union has invested time and knowledge in the process of developing its environmental laws and approaching waste management problems. Only by setting this topic among the priority policy actions and dedicating the necessary efforts could the range and quality of this legislation be seen as it is today. The waste strategy has been shaped by a series of Environment Action Programmes having the first one been set for the period from 1973 to 1976. Currently at the 7th Environment Action Programme, which will be guiding the European Environment policy until 2020, the EU indicates a concern with the intensification of actions towards waste production and management. This can be noticed particularly from the Programme's three key-objectives 'to turn the Union into a resource-efficient, green, and competitive low-carbon economy'.⁶¹¹ The development of the WEEE Directives itself is part of this process as the EU has adopted a number of key legal instruments to focus on certain waste streams, and their treatment and disposal processes (which is represented by the enactment of specific legislation for each waste stream). It is imperative to notice this trajectory in order to understand the importance of a combination of different policy and legal instruments to approach waste management and all of its related topics.

As seen in chapter 3, these European policies have gradually inserted into laws the need to reduce and even prevent waste, working together with bans of toxic elements from products composition; fees and bans of products from landfills; product design for the environment; packaging and packaging waste regulation, among other measures. At the core of the European waste strategies lies the Waste Framework Directive⁶¹² with its established hierarchy for waste: prevention, re-use, recycling, and disposal. A strictly structured five-step order of priority where prevention of waste is favoured before reuse and disposal is the last resort when all other options have been exhausted. The waste hierarchy, therefore, was made legally binding for Member States by the Waste Framework Directive: Member States 'shall apply as a priority order in waste prevention and management legislation and policy'.⁶¹³ Besides the fact of achieving a legal status, the waste hierarchy has its importance as a guiding waste management principle, which has been emphasised in a number of Articles. Namely, Articles 28(1) and 29(1) require both waste

more, Parliament advocated, in a second Resolution of 22 April 1994, the need for further development of the Community strategy on waste management (OJ C 128/471, 9.5.94).

611. The programme entered into force in January 2014. Decision No 1386/2013/EU of the European Parliament and of The Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' (Text with EEA relevance) OJ L 354, 28.12.2013, 171-200.

612. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22.11.2008, 3.

613. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22.11.2008, 3-30.

management plans and waste prevention programmes, respectively, to be established in accordance with the waste hierarchy.⁶¹⁴

Further in the European waste policies and legislation, the Landfill Directive⁶¹⁵ and the Regulation on Shipments of Waste⁶¹⁶ are relevant legal instruments to the success of the WEEE take-back systems. Landfill taxes and bans played a significant role in diverting a number of materials from landfills and, as a consequence, prevented priority waste streams – end-of-life EEE included – from officially ending up in landfills.⁶¹⁷ In its turn, the Regulation laid down rules strengthening, simplifying, and specifying the procedures for controlling waste shipments in order to improve environmental protection. It also incorporated the provisions of the Basel Convention, and the OECD's decision on the control of transboundary movements of wastes destined for recovery operations in EU law. As discussed by UNEP,⁶¹⁸ the impact of illegal traffic of waste lead to severe negative implications for the environment and human health. Additionally, illegal traffic of waste has an adverse effect on trade and competition, putting law-abiding businesses at an economic disadvantage. Further, it undermines international policy, the rule of law and enforcement efforts. Particularly concerning WEEE, illegal traffic of waste affects the control over WEEE flows, therefore, preventing monitoring and control on collection and treatment of this waste stream. Additionally, due to precious materials contained in it, great damage to health and the environment is caused. Informal businesses use untrained individuals lacking the proper tools or facilities to perform unsafe and highly toxic rudimentary processes of extraction of valuable materials.

In the context of EU environmental policies, recently the European Commission has adopted an ambitious action plan for the circular economy strategy.⁶¹⁹ Europe's transition towards a circular economy seeks, among

614. David Lazarevica, Nicolas Bucletc and Nils Brandta, 'The application of life cycle thinking in the context of European waste policy' (2012) 29-30 *Journal of Cleaner Production* 199-207, 200.

615. Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, OJ L 182, 16.7.1999, 1-19.

616. Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste, OJ L 190 12.7.2006, 1.

617. European Environment Agency (EEA), 'Diverting Waste From Landfill – Effectiveness of waste-management policies in the European Union' EEA Report No 7/2009 (Office for Official Publications of the European Communities 2009) 50-61.

618. UNEP, 'Waste Crime – Waste Risks: Gaps in meeting the Global Waste Challenge' A UNEP Rapid Response Assessment (September 2015) 13
<<http://web.unep.org/ourplanet/september-2015/unep-publications/waste-crime-waste-risks-gaps-meeting-global-waste-challenge-rapid>> accessed on 10 June 2015.

619. Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste COM(2015) 593 final; Proposal for a Directive of the European Parliament and of the Council amending Directive 94/62/EC on packaging and packaging waste COM(2015) 594 final; Proposal for a Directive of the European Parliament and of the Council amending Directive 1999/31/EC on the landfill of waste COM(2015) 595 final; Proposal for a Directive of the European Parliament and of the Council amending Direc-

others things, to foster sustainable economic growth. Also called the Circular Economy Package, it sets out a timeline for a series of actions – from production and consumption to waste management and the market for secondary raw materials – to be completed. According to the European Commission,⁶²⁰ the package brings a revised legislative proposal on waste which includes clear targets for waste reduction, and credible long-term path for management and recycling of waste. In order to ensure effective implementation, the waste reduction targets in the proposal are complemented by concrete measures to address obstacles and different circumstances across EU Member States.

Further on the ‘Circular Economy Package’, key elements of the revised waste proposal include: a common EU target for recycling 65% of municipal waste by 2030; a binding landfill target to reduce landfill to maximum of 10% of all waste by 2030; a ban on landfilling of separately collected waste; promotion of economic instruments to discourage landfilling; Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU; concrete measures to promote re-use and stimulate industrial symbiosis – turning one industry's by-product into another industry's raw material; economic incentives for producers to put greener products on the market and support recovery and recycling schemes for packaging, batteries, electric and electronic equipment, vehicles. The legislative proposal has included amendment proposals to the Directive on Waste, the Directive on Packaging Waste, the Directive on Landfill, and to the Directives on electrical and electronic waste, on end-of-life vehicles, and batteries and accumulators and waste batteries and accumulators combined. The proposal on waste currently is under the procedure of opinions, revisions, until a final decision of the European institutions is made.⁶²¹

Finally, one more field should be stressed as having great relevance for actions to be taken when the improvement of policies and practices towards the environment is desired. Education is of special interest to the environment, and has been recognised by the European Union since it gave start to its environmental action programmes in 1973. The fifth action programme

tives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment COM(2015) 596 final.

620. European Commission, ‘Closing the loop – An EU action plan for the Circular Economy’ (Communication) COM(2015) 614 final.

621. Concerning the WEEE Directive 2012/19/EU the proposal suggests amendments to its Article 16, where paragraph 5 is deleted, and paragraphs 5a, 5b, 5c and 5d are inserted (concerning reporting obligations). Also its Article 21 is replaced (concerning Committee procedures). European Commission, Proposal for a Directive of the European Parliament and of the Council amending Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EU on waste electrical and electronic equipment 2015/0272(COD) 2.12.2015, Article 3 [Amendment of Directive 2012/19/EU].

even placed education and vocational training on the environment among the range of instruments that can be used for sustainable development.⁶²² The environment was officially made part of EU's policies and measures since 1997 by the Treaty of Amsterdam, which lists sustainable development as one of EU's objectives.⁶²³ As regards education specifically, the determination expressed by several environmental action programmes to increase public awareness of environmental problems has been confirmed since 1988 by the resolution of the Council of Ministers on environmental education of 24 May.⁶²⁴ This resolution marked the beginning of the promotion of environmental education. It called for measures both at EU and at national level, focusing on the introduction of environmental education into all sectors of the education system. Concrete measures proposed by the resolution were elaborated to both the political (inclusion of environmental education objectives in the development of curricula) and organisational levels (encouragement of extra-curricular activities). Already in the 90's, this was the understanding of the European Commission: 'if a more sustainable development is desirable, the general public needs to be better informed and more involved in decision-making and in the actions concerning the environment. In this sense, awareness-raising can play a crucial role in the success of environmental policies. A better understanding of the complex interaction between individual and social behaviour and its effects on the environment and on the drive for sustainable development must be fostered.'⁶²⁵

Environmental education, thus, is of considerable relevance to raise awareness and, ultimately, to achieve sound and proper management of solid waste. Changing society's perception regarding the environment they live in, changing old habits in environmentally friendly and socially viable pipelines as it builds more critical human beings who are able to fight for better living conditions depends greatly on information and education. Environmental education can be indicated as one of the possible interdisciplinary instruments able to train and at the same time, to raise awareness of society in general about environmental problems, currently faced by all humankind.⁶²⁶

622. Resolution of the Council and the representatives of the governments of the Member States, meeting within the Council of 1 February 1993 on a Community programme of policy and action in relation to the environment and sustainable development, OJ C 138, 17.5.1993.

623. The principle of sustainable development has finally been introduced by the Treaty of Amsterdam in the 'Preamble', in the new Article 2 and in the 'Principles' in Article 2 of the EC Treaty. In addition, Article 6 of the EC Treaty calls for the incorporation of environmental protection into all Community policies and activities.

624. Resolution of the Council of Education Ministers meeting within the Council on environmental education of 24 May 1988, OJ C 177, 6.7.1988.

625. European Commission, 'Environmental education and training: Selected projects' (Office for Official Publications of the European Communities 1999) 5.

626. Horacio Villalón Mendoza and others, 'Situación de la separación de residuos sólidos urbanos en Santiago, Nuevo León, México (2010) 13(3) Ciencia-UANL, 254-260. <<https://dialnet.unirioja.es/servlet/articulo?codigo=3245931>> accessed 19 May 2016.

11.4 Legal Instruments and Concepts applicable to Brazil: Specific Recommendations

As concluded by chapter 2, if sufficient similarities between social environments and jurisdictions are present, successful legal transplants are likely to happen. Relevant criteria were chosen in that chapter to determine the presence of similarities in certain relevant aspects for law and policies on waste management to be established. Concerning European Union and Brazil as a case for legal transplant, such analysis was performed in that chapter. Enough similarities were concluded to be present in the European Union as a confederation of States and in Brazil as a federation of states. The legal instruments and concepts used in the WEEE Directives are, as follows, recommended as a possibility for a similar structure of the European WEEE take-back system in Brazil based on the possibility for legal transplants between this specific origin and host jurisdiction concluded in chapter 2. The analysis of the transposition process of each of the specific recommendations here to be mentioned is not part of the scope of this work. Nonetheless, it most certainly stands as an interesting and relevant topic for future research.

The following legal instruments and concepts have been identified as a result of the analysis of the WEEE Directives on providing safe and environmentally correct take back systems for the recovery, recycling and reuse of e-waste. The analysis was performed as a combination of the study of the official results informed in implementation reports of the WEEE Directives, the legal evolution of the WEEE Directives themselves, and the e-waste management systems (national study cases observing legislation, policy, and structure) existing in the Netherlands, United Kingdom, and France. The special chapter on the Scandinavian countries – Denmark, Finland, Norway and Sweden – was included after observing the considerably high levels of collection and treatment of WEEE. The intention of this study has been to identify and explain feasible suggestions to the Brazilian framework for a national WEEE take-back system. Considering that the country comprises 26 Federal States which are rather different from each other it is important to bear in mind that no ‘one-size-fits-all’ solution exists. These guiding recommendations, therefore, should be tailored and implemented taking local conditions into account but are, nonetheless, extracted from a legal structure where differences between States are also present and could be overcome.

Simple & Practical Legal Rules and Procedures

Simpler and clearer legal provisions are essential to make actions easier to understand and to apply: this statement translates one of the major lessons from the evaluation of the implementation reports of the Directive

2002/96/EC discussed in chapter 4. The WEEE recast Directive had, therefore, not only the purpose to serve the concern for environmental protection, but also to be an instrument of improvement of clarity of concepts and adjustments of procedures. From the first and recast WEEE Directives, the establishment of a clear legal framework for e-waste management should provide: a clear definition of ‘producer’, of the role of national and local governments, and of who has the responsibility to finance e-waste collection and recycling; a clear description of how the amounts of e-waste to be collected and recycled will be calculated; and a practical procedure for producers’ registration. In sum: practical and balanced distribution of roles and responsibilities with doubtless procedures and goals as a strategy to promote cooperation and avoid free-riders (as well as unnecessary administrative tasks).

The existence, for instance, of unclear proceedings or documentation for registration and reporting proved to lead to substantial complexity, extra costs, and market barriers. Harmonising core elements right at the start is of great relevance. Once observing the Brazilian legal framework regulating waste management and take-back systems it is noticeable that Decree No 7.404/2010 did not bring details and specifications to the shared responsibility of products’ life cycle and take back systems introduced by Law No 12.305/2010 as one would expect. Neither did it have specified deadlines for the implementation of take-back systems or concrete collection and treatment targets.⁶²⁷ This has been a missed opportunity leading to gaps in the law and delays in the process of implementing the take-back systems (WEEE included).

Producer Responsibility

‘European environmental law with regard to waste increasingly relies on the principle of extended responsibility.’⁶²⁸ Along the same line, the success of the WEEE Directives equally relies on the full implementation of the principle of producer responsibility. Better collection rates are also directly influenced by the full implementation of the principle of producer responsibility.⁶²⁹ That is, the extended responsibility involves the producer into thinking solutions for a low-cost recycling process, from product design to take-back system, and it has proved to be one of – if not the most – relevant element in the waste legislation in Europe.

627. Ilidia da Ascensão GM Juras and Suely Mara VG de Araújo, ‘A responsabilidade compartilhada pelo ciclo de vida do produto’ in Arnaldo Jardim, Consuelo Yoshida and José VM Filho (eds.) *Política Nacional, Gestão e Gerenciamento de Resíduos Sólidos* (Manole 2012) 57-77, 73-75.

628. Vedder (n 169) 3.

629. CEMR position paper on the recast of the proposal for a directive on waste electrical and electronic equipment (WEEE) COM(2008)810/4 Brussels, November 2009, 2.

The principle of shared responsibility pervades the European waste management dynamics. It was proposed in the Fifth Environment Action Programme and at the EU level it has been applied since the Waste Directive 2008/98/EC.⁶³⁰ The principle considers the life cycle of a product from manufacture until the end of its useful life producers, material suppliers, trade, consumers, and public authorities share specific waste management responsibilities. In shared responsibility, each member of the chain is affected by their upstream supplier and affects their downstream recipient. Hence, it is in the interest of each and every stakeholder to participate in improving the performance of the chain.⁶³¹ Still, concerning EEE, it is the product manufacturer who has the predominant role. The manufacturer is the one to take key decisions concerning the waste management potential of his product, such as design, conception, use of specific materials, composition of the product and finally its marketing. The manufacturer is therefore able to provide the means not only to avoid waste by a considered utilisation of natural resources, renewable raw materials or non-hazardous materials, but also to conceive products in a way which facilitates proper re-use and recovery. Brazil focuses on shared responsibility and Europe on producer responsibility; however, the legal framework in Brazil (NPSW) relies on the polluter-pays principle and seeks to assign each actor with a proportional responsibility just as well as in the European one. In legal frameworks the take-back systems, that is, producers/importers, distributors, consumers all have been differentiated and made responsible for different roles and actions. The positive outcome of the distinction of actors and attribution of responsibilities, supported by the legal instruments included in the law, is the integration and coordination of actions across the territory and the establishment of a coherent well-functioning system.⁶³²

630. Article 15(2) 'Without prejudice to Regulation (EC) No 1013/2006, Member States may specify the conditions of responsibility and decide in which cases the original producer is to retain responsibility for the whole treatment chain or in which cases the responsibility of the producer and the holder can be shared or delegated among the actors of the treatment chain.' OJ L 312, 22.11.2008, 3-30.

631. Manfred Lenzen and others, 'Shared producer and consumer responsibility - Theory and practice' (2007) 61(1) Ecological Economics 27-42, 36.

632. In Brazil, the polluter pays principle is incorporated in Article 4(VII) of Law No 6938/81, according to which the national environmental policy will aim to impose, the polluter and the predator, the obligation to recover and/or indemnify the damage and, the user, with the contribution by the use of environmental resources for economic purposes, which also acknowledges in its last part, the principle of user pays. It is also hosted by Article 225 2nd and 3rd paragraphs of the Constitution, referring to the obligation to restore the environment in because of environmental degradation caused by mining and liability for environmental damage. See more Annelise Monteiro Steigleder, *Responsabilidade civil ambiental: as dimensões do dano ambiental no direito brasileiro* (Livraria do advogado 2004).

Collection: targets, facilities, stakeholders, and responsibilities

Collection targets need to be easy to monitor and realistic to achieve so that high collection rates are ensured and the system works well. Prior to set up feasible targets, there is the need for reliable data to be obtained. Studies with the participation of industry, considering the amounts of products put on the market, consumer and post-consumption behaviour, close understanding of WEEE flows to recyclers, to export, to landfills are all relevant to be performed for the purpose of obtaining reasonable information to define targets. The planning on collection and treatment needs complete information over those figures. Taking for example one of the study cases, the British experience has shown in chapter 5 the use of public consultations as a form of obtaining accurate data, and awareness of the issues and concerns of the stakeholders.

An additional concern must be raised in the case of Brazil and its informal collection system. The NPSW has already recognised the importance of promoting partnerships with cooperatives, and learning from the experience of other jurisdictions shows that no actor should be left aside. The full involvement of all is essential to realistic estimates and effective decisions.⁶³³ Although the work of these cooperatives should be developed in the same coordinated way with the other agents of the life cycle of the product and should not be seen as a lower cost alternative for the government. Rather, they should be a complementary instrument to other existing ones to enable the objectives of NPSW.

During the research another point of consideration emerged: the proximity of collection points to consumers. Territorial distances and allocation issues must be carefully analysed. As seen in the chapter on Scandinavian countries showing how overcoming territorial difficulties to provide household collection points are a relevant factor to increase collection. When it comes to actors responsibilities for collection, Article 5(2)(a) of the first Directive did not explicitly identify who should be responsible for setting up the infrastructure (physical responsibility). It assigned the distributors with onus to accept WEEE from consumers on a one-to-one basis when selling new products (later revised by the Recast Directive), but the Member State can deviate from this requirement if an alternative procedure is just as convenient for consumers according to Article 5(2)(b)(c). At the same time, Article 8(1) indicates that producers are financially responsible for 'at least' the collection from collection points onwards, leaving room for extending the producer responsibility to finance collection from households (financial responsibility). The physical and financial responsibilities for collection of

633. Step Initiative, 'Guiding Principles to Develop E-waste Management Systems and Legislation' Step White Paper (UNU/Step Initiative 2016) <www.step-initiative.org/publications.html> accessed 7 March 2016.) 7.

WEEE from private households assigned to distributor, municipality, and producer were different according to national interpretation and convenience. Still, it is certain that responsibilities must be clearly defined, and should allow for some flexibility concerning the forms for its compliance. Factors such as pre-existing structures for separate collection already in place – coordinated either by the municipality or by private companies – are to be considered.⁶³⁴

Register of producers and Monitoring of WEEE flows

‘Ensuring that producers pay for ‘their’ waste requires registering which producer places which products on the market.’⁶³⁵ Again, clarity of procedures, organisation, and control need to be present in order to support a good development of the take-back system. Ever since the first Directive the register of producers has been mandatory, a system that has been refined with the recast Directive. This has been observed in chapter 4 where drafting processes of the WEEE Directives were observed. Initially, producers had to register at each national register of the MS where they put products on the market and many different national procedures were established. The recast Directive discussed the possibility of a ‘Pan-European Registration’. With that, stood the idea of a producer who must register only once with any national register in order to place his EEE on the market in every Member State. A ‘Pan-European Registration’ has not been created; nonetheless, national registers are currently working together with the primary objective of promoting a harmonized approach to registration, reporting and scoping of issues across the Member States.⁶³⁶ Some examples of organised registering and monitoring can be pointed out, as it is the case with the control of approved exporters and authorised treatment facilities that have been listed in the United Kingdom and in the Netherlands. The policy has been expanded other stakeholders than producers to due to its successful role in helping the monitoring of EEE and, consequently, of WEEE flows. Another point of attention and concern is the need for reliable estimates of generation of waste so policymakers and waste management service companies. With the enactment of the NPSW in 2010 a proper collection and treatment of WEEE has been set as one of the

634. For more information concerning the differences in allocation of responsibility for collection of WEEE from private household in EU see Knut Sander and others, ‘The Producer Responsibility Principle of the WEEE Directive Final Report August 19th 2007’ (DG ENV Study Contract Okopol, iiiee & RPA 2007) 5 <http://ec.europa.eu/environment/waste/weee/events_weee_en.htm> accessed 12 May 2014.

635. Anne Burrill, ‘Potential Lessons from a European Perspective, European Commission – DG Environment’ (Seminário Internacional sobre Resíduos de Equipamentos Eletrônicos, Recife, 24 February 2011) <<http://siree.portodigital.org/siree2011/>> accessed 19 May 2016.

636. See <<https://www.ewrn.org/publications-events/>> accessed 27 May 2016.

main goals. For such a system to be efficient, reliable figures on WEEE generation to allow adequate control treatment and disposal need to be available.⁶³⁷

Implementation: Reporting periodically and objectively

‘Delayed or inadequate implementation has many negative consequences. It ultimately harms the environment and human health, generates regulatory uncertainty for industry and puts into question the level playing field of the Single Market. The long-term remediation costs – for example for clean-up of illegal waste sites and restoration of damaged habitats – can be much higher than the costs of prevention.’⁶³⁸

To report in a regular basis on the waste solution progress per state is an integrator of key take-back system information and results as an important communication aid towards all stakeholders involved in developing, maintaining and improving take-back systems. It represents a positive strategy whereby implementation can be monitored, and obligations can be fulfilled by public authorities. Simplified reporting procedures, increased guidance on data collection and reporting represent the most recent improvements to the implementation process of European regulations of different waste streams. Within the regulations and reports, the following concerns reveal a possible path to a successful initiative. The references to reach targets respecting the deadlines (and a special attention to the differences among the States); to clear definitions; to monitor and produce quality reporting on a regular basis; a periodical revision of such targets⁶³⁹ and methods according to the process and results of the implementation of the directives by the Member States produce a fairly successful model.

Beyond the national level, implementation in the Member States is monitored by the European Commission. The Commission has a key role in improving implementation of legislation for the environment given its right to initiate new legislation and its responsibility to oversee the application of

637. Marcelo Guimarães Araújo and others, ‘A model for estimation of potential generation of waste electrical and electronic equipment in Brazil’ (2012) 32 Waste Management 335-342, 340.

638. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness COM(2012) 95 def. 3

639. Considering the practice of periodically reviewing goals and monitoring the implementation process, the European Commission Staff Working Document stands as a fair example. The document is entitled ‘Implementation Plan for the Proposal for a Directive of the European Parliament and of the Council reviewing the targets in Directives 2008/98/EC on waste, 94/62/EC on packaging and packaging waste, and 1999/31/EC on the landfill of waste, amending Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment (WEEE)’ SWD(2014) 210 final.

Union law (according to Article 17 TEU as ‘guardian of the Treaties’). The Commission services use a wide range of tools to gather information about implementation and work together with the Member States to implement the environmental requirements, ranging from advising on transposing EU legislation to expert groups on specific implementation issues as well as enforcement action.⁶⁴⁰

Enforcement

The 14 February 2014 was the deadline for EU Member States to transpose the new Waste Electrical and Electronic Equipment (WEEE) Recast Directive 2012/19/EU into national WEEE Regulations. The European Commission has referred Germany⁶⁴¹ to the European Court of Justice on the grounds that Germany has failed to transpose the WEEE Recast Directive. The Commission asked the Court that Germany incurs a penalty of 210,078 euro per day until the law is enacted in the country. Slovenia and Poland have also been referred to Court for similar reasons. For Poland,⁶⁴² the Commission asked the Court to impose penalty payments of 71,610 euro per day until the law is enacted. For Slovenia, the Commission is asking the Court to impose penalty payments of 8,408 euro per day until the law is enacted.

Investments

Among the most effective measures taken, lies the development of infrastructures both for separate collection and treatment, the adaptation of the waste management plans, enforcement and coordination between authorities at all levels, the reduction of the use of landfilling capacities, through implementation of economic instruments (in particular, landfill tax, EPR schemes, pay-as-you-throw schemes).

In the case of Brazilian investments, not only investments in technology, research, and training are lacking, but especially a revision of tax incentives or waivers to support industry and commerce in bearing the extra costs brought by the responsibilities brought upon them. The high amount of taxes currently part of the Brazilian tax system, at times with a cumulative effect,

640. The Environmental Implementation Review (EIR) is included in this context and it aims to help fill implementation gaps and to maximize the benefits of Union environment legislation by offering tailored-made support to Member States, as well as the Fitness Check on environmental reporting.

641. On October 24 2015 Germany released their regulations transposing the recast WEEE Recast Directive.

642. Action brought on 16 October 2015 — European Commission v Republic of Poland C-545/15 European Commission vs Republic of Poland.

represents a permanent problem for survival of industry and commerce.⁶⁴³ The need for a tax reform has been long awaited for and the concern with stakeholders involved in the EEE life-cycle should be included once it happens.

Governmental participation

The role that the central government plays in gathering and promoting best practices is another relevant aspect. This political behaviour in taking the e-waste management issue as a focus leads not only to better regulation and enforcement, but also to gathering fragmented information and promoting good practices, by involving all stakeholders in the discussions.

The role of the State is also needed to create licensing systems for collection schemes, register of producers, certification and standards for collection and recycling. For instance in France the eco-contribution (visible fee to finance the costs of collection of historical WEEE) can only be collected by a compliance scheme properly authorised by the State. Equally, collectors and recyclers must obtain licenses after proving fulfilling minimum standards to receive manage, sort and store waste.⁶⁴⁴

Historical WEEE management

An immediate issue to be approached when take-back systems for end-of-life products are being considered is 'historical waste'. As observed previously in this work, once the setup of a WEEE system is in place it implies an increase of costs to the actors responsible for its organisation and/or financing. Bearing the costs of their own products already poses as a challenge to most, for this reason, the financing of the management of historical WEEE by a visible fee has been the option given by the WEEE Directives and the choice of the majority of Member States. The case study of the French systems is an example of use of the fee (from the implementation of the first WEEE Directive until nowadays). The Dutch system has used it for certain end-of-life EEE and it has been extinct in 2013. In the British system, despite the inclusion of the provision into national law, it was not adopted in practice. The arguments

643. Brazilians live with a complex and inefficient tax collection system. It increases costs, raises tax burden, creates uncertainty and undermines economic growth. In Brazil, a company spends on average 2,600 hours to pay the more than 60 federal, state and municipal taxes. A much higher figure than the average of 503 hours registered in other countries of Latin America and the Caribbean. See World Bank, 'Doing Business 2016: Measuring Regulatory Quality and Efficiency Annual Report' (World Bank 2016) 190 <www.doingbusiness.org/reports/global-reports/doing-business-2016> accessed 25 May 2016.

644. In Brazil, CONAMA's resolutions establish national criteria and definitions while ABNT sets out technical classifications.

for the use of the fee are mostly connected to high figures concerning the amount of the collected WEEE represented by historical WEEE.

Engagement of stakeholders in the policy and law-making processes

It is clear that waste policies need time to be conceived, prepared, implemented and executed. This is particularly true when taken into account the complexity of involving all levels of public authorities, as well as business interests and the population in policies that are necessarily multilevel. Policy making for Solid Waste Management should include all relevant stakeholders, inclusive, when the case, waste pickers organisations.⁶⁴⁵

Studies over compliance level and waste policies have identified that waste policies proposed by respondents often focus on finding ways to influence and educate the population. This stands as a key factor in the success of an environmental policy as more differentiated approaches to waste policy could be adopted, for instance, combining general information campaigns with targeted experience, regulatory approaches with incentive, and the solution of old environmental with the adoption of new environmental friendly technologies.⁶⁴⁶ Examples were seen in the case studies, where public calls and consultations to producers, importers, and distributors in the Netherlands and the United Kingdom resulted in greater engagement of the stakeholders into the implementation process.

Culture of separate collection, recycling and reuse: information and awareness

Implementing WEEE regulations is not only a legal matter, but also a cultural one. Within the framework created from analysts if this research, societies with a history of recycling habits, sustainable concerns, were significantly more successful in developing the WEEE system nationally. This factor represents a Brazilian particularity which must be addressed to within the policy and legislation for the take-back of WEEE. A reinforced attention on environmental education and awareness campaign are recommended actions to approach this matter.

645. See GIZ, 'Recovering resources, creating opportunities: Integrating the informal sector into solid waste management' on behalf of the Federal Ministry for Economic Cooperation and Development (March 2011) <<https://www.giz.de/de/weltweit/15913.html>> accessed 5 February 2015. Within the Member States Romania is an example of informal WEEE sector in need for integration to the management system.

646. Committee of the Regions of the European Union, 'Implementation of the Landfill Directive at regional and local level' (Office for Official Publications of the European Communities 2006) 60.

Improvement Measures

In order to reach higher rates of collection and treatment a series of measurements should be considered. It is fundamental to improve the quality of statistics, generating clear forecasts of waste management capacities and, consequently, realistic targets. Additionally, a better use of key economic instruments, technical and fiscal measures to support the development of markets for re-used products and recycled materials have proved to be crucial. Finally, to improve the quality of recycled materials, to focus on public awareness of proper waste management and litter reduction, as well as to ensure appropriate coordination between the competent public authorities with the involvement of all stakeholders involved in waste management are among the most important measures to be taken to improve and develop a WEEE system.

11.5 Brazil and Characteristics of its Waste Management Sector

At 515 years old in 2015, of which 322 years were as a Portuguese colony, Brazil is a relatively young state. Until the early 1980s, dictatorship regimes ruled the country and although Brazil enjoyed a democratic government ever since, where the president – who is both head of state and head of government – is directly elected by the Brazilian citizens, deep problems such as high levels of social inequality, economic instability, corruption, and environmental degradation still remain to be solved. In that sense, this vast country of ‘continental dimensions’ – as it is often described⁶⁴⁷ – with a population of 202 million people,⁶⁴⁸ and known for its extraordinary potential in terms of natural resources is also known as one of the fastest growing economies in the world with many issues to be tackled, of which, waste is one of them.

According to the latest data on e-waste, in 2014, Latin America produced 9% of the world’s electronic waste, the equivalent of 3,904 kilotons (kt.), of which Brazil alone was responsible for more than 1,4 kt.⁶⁴⁹ The particular features of Brazil’s socio-economic dynamics leads to a scenario where it takes end-of-life EEE a long time before it is sent back to the system as WEEE. Before finally discarding an EEE, most consumers send it to repair

⁶⁴⁷. Around 8.5M km² according to the Brazilian Institute of Geography and Statistics (IBGE), agency which is the main provider of data and country information for the different segments of civil society, as well as organs of federal, state and municipal levels of government.

⁶⁴⁸. According to IBGE, as published in the Official Gazette (DOU) on August 28, 2014, the population estimates for Brazilian municipalities with reference date on July 1, 2014.

⁶⁴⁹. Federico Magalini, Ruediger Kuehr and Cornelis Peter Baldé, ‘E-Waste in Latin America: Statistical analysis and policy recommendations – November 2015’ (UNU, IAS & GSMA 2015) 7-15 <<https://collections.unu.edu>> accessed 5 January 2016.

until there is no more repair solution. Sometimes, WEEE is simply stored in households, as considered a valuable object. A perpetuation of this cultural habit of storing end-of-life EEE reduces the WEEE flows and so the profits for take-back of WEEE. This behaviour has equally been identified during the implementation process of the EU Member States to which legal rules were combined and reached advances: approaching the role of end-users to return WEEE, the increase of collection points, free take-back from distributors, information campaigns. In short, those were some of the lessons learned.

Brazil has a long tradition of individuals participating in the collection of scrap materials. Initially an unregulated market, susceptible to all sorts of insecurities and risks, for the last years the activity of ‘waste scrapping’ has been recognised by the Brazilian legislator. This has evolved to the fact that the Brazilian legislation, aware of the need to involve cooperatives of waste pickers, has included this provision in the text of the NPSW. It instructs the need for the take-back system being developed for Brazilian WEEE to include cooperatives of waste pickers in the dynamics. This has been recognised as of major social interest due to the positive economic impact it would have over this less privileged layer in Brazilian society.

The National Policy on Solid Waste created goals for the disposal and recovery of waste dumps associated with social inclusion of waste pickers and recyclable material collectors. It has also determined that the integrated management and the management of solid waste, including hazardous, are the responsibility of their generators and the government. In the European Union, the electronic producer is obliged to make the collection of electronic waste in general, not just his own brand. In Brazil the industry is reluctant to accept such a system due to the fact that the rates for illegal products are very high, much higher than in Europe. Aware of this issue, added to other aspects of the Brazilian reality, rather than the model of extended liability used in the EU, the NPSW chose for the model of shared responsibility (Art. 30 NPSW650). Even though producers of EEE are assigned with main legal obligations – as it is in the EU – the purpose of the choice of the legislator for

650. Law No 12.305/2010, art. 30: ‘It is established the shared responsibility for the life cycle of products, to be implemented individually and in chained form, to manufacturers, importers, distributors and traders, consumers and owners of public urban cleaning services and solid waste management according to the powers and procedures provided for in this Section. Single paragraph. The establishment of shared responsibility for the life cycle of products seeks to: I - make compatible interests between economic and social agents and the processes of business and marketing management with environmental management, developing sustainable strategies; II - promote the use of solid waste by directing it to its supply chain or other production chains; III - reduce the generation of solid waste, waste materials, pollution and environmental damage; IV - encourage the use of less aggressive inputs to the environment and more sustainable; V - stimulate the development of market, production and consumption of products derived from recycled and recyclable materials; VI - provide that productive activities achieve efficiency and sustainability; VII - encourage good social and environmental responsibility practices.’

the principle of shared responsibility in the Brazilian policy for waste management was to bring more responsibility to the other players, consequently, engagement and cooperation from all.

The national law establishing the Brazilian policy for solid waste was essential to bring the attention and action to the need for improvements in the systems for collecting and treating waste, however, it does not stand on its own to provide such a deep change. The initial expectation that the market would organise and regulate itself has proven to be quite a disappointment.⁶⁵¹ More than five years after the coming into force of the national policy which defined five groups for mandatory take-back,⁶⁵² only one take-back system has set a sectoral agreement, facing its early stages of implementation. As seen, the difficulties are considerable: conflict of interests given the great number of stakeholders involved; the complexity of treating this toxic type of waste; lack of technology, lack of investments; lack of know-how; lack of budget from the municipalities to develop the 'waste management plans', among many others things. A central issue – in this case, particular not only of Brazilian context, but most developing countries – is the need for investments added to an effective structure to monitoring of the implementation. Responsibilities need to be transformed into opportunities, so costs are reduced, an investments come, above all, in technology, structure, and training.

11.6 Concluding Remarks

The take-back systems for WEEE implemented across the European Member States have engaged all the actors from the WEEE dynamics and achieved rising figures of collection and recycling of WEEE even though there have been variations in the national implementations. This experience supports the argument that the instruments and concepts brought by the WEEE Directives have created a successful path that can be valid for different national contexts. The European policy and law for e-waste management, therefore, has room for the necessary adjustments to local and/or regional needs. Other legal systems might be able to learn from this apparent successful legislation. The possibility to learn and borrow from another jurisdiction is acknowledged in one of the theories of legal transplants. As argued by Alan Watson, 'legal transplants are the most common source of legal change and legal development in times of urgent matters.'

In Brazil today, it is possible to observe developments in the negotiations of regulations for a national system to collect and treat the main waste

651. See 'Original Equipment Manufacturers' Participation in Take-Back Initiatives in Brazil' (2013) 17(2) *Journal of Industrial Ecology* 238-248, and other works from João Quariguasi Frota Neto and Luk N Van Wassenhove.

652. Law No 12.305/2010 Packaging, electro electronic, medicaments, light bulbs, and plastic containers for lubricant oils.

streams specified at the NPSW. Also, the possibility to learn from other jurisdictions to solve the waste problem, including the European context has already been considered. Steps are taken to tackle problems with WEEE. Negotiations are taking place since 2013. However, various difficulties need to be solved before the stakeholders involved sign the sectoral agreement. Those are related to roles, responsibilities and concepts. What is more, there are topics which have not been approached up until this date, even though lessons learned from the EU Directives evidence their key relevance.⁶⁵³ By observing the current status of the implementation of the NPSW and the negotiations for a setup of a take-back system for WEEE in contrast with the European WEEE Directives and its WEEE systems it was possible to identify points for further development to improve this process in Brazil. Those, which have been discussed with greater details within the Chapters of this book, as well as pin-pointed earlier in this chapter, are mainly related to a need for establishing clearer roles, responsibilities, and targets, as well as providing the proper conditions – fiscal, bureaucratic etc. – for an effective take-back system for WEEE to be established nationally.

The delays in the ministerial responses to the requests and consultations presented by the industrial sector not only reflect the current political economic crisis affecting the country, but also the need to acknowledge the important role that industry plays to solve the waste problem. An improvement in the communication between government and industry is crucial to help identify setbacks and foster mutual cooperation. Furthermore, revision of taxes, especially concerning transportation and incentives for research on technologies for product design for recycling and reuse, are all equally important. Better monitoring and, before that, a clear structure nationally implemented to control WEEE flows also add to the list along with incentives for investing in the necessary technology to establish a waste management structure for a great number of municipalities. And finally, the urgent need for investments on training and knowledge so that qualified personnel in local, state, and national level can monitor the application of the law, report the process, and support the setup of the a proper e-waste management in Brazil: one that allows for the successful development of the take-back system and succeeds in facing the struggles that are natural to new laws, administrative matters, investments, qualification, and logistics (given the territorial extensions of Brazil the great distances are a considerable obstacle).

In short, in order for environmental, economic and social benefits to be achieved by approaching the e-waste matter, only if detailed legal rules and a clear sectoral agreement ensure that (1) Establishment of a specific legislation on WEEE, with regulations that are adequate for the different regional market conditions; (2) Separate collection of WEEE is guaranteed, monitored

653. Information, enforcement, monitoring and compliance mechanisms, to mention a few.

and tracked, with effective and safe controls to be clearly established; (3) once collected, e-waste is properly treated (with the best available technologies and applicable standards), with the structuring of a reverse logistics stream, with reverse logistics channels for each product type that are competitive and environmentally and technologically well structured; (4) Fostering the reuse, refurbishment and secondary recycling markets with end-of-life EEE and their parts are properly recovered or disposed of (5) Incentives for the creation of scavenger associations and recycling facilities, by tax breaks and low-interest loans to small and medium enterprises.⁶⁵⁴ The beginning of this process could be seen in the NPSW and even further, in the legislation discussed in chapters 9 and 10. Nevertheless for WEEE and other waste stream specified for take-back, it is essential that more specific legal rules and agreements are established in order to fully structure the system. This entails negotiations with all players and specific studies to be performed in a feasible – although strictly-scheduled – timeline. Only then, the approach to the growing problem that safe and sound management of WEEE represents can be successful.

Based on the comparison of Brazil and Europe which resulted from the use of the established criteria elected for evaluating possibility of legal transplants (chapter 2) it is possible to infer that Brazil is likely to face more difficulties in implementing certain instruments than others. These variations come as a consequence of the certain aspects of the Brazilian context categorised in chapter 2, some of which should be stressed, including: key public institutions (government effectiveness, independence from political pressure, quality of public services), civil society and media (voice and accountability), and population and regional diversity (cultural aspects but also abysmal disparities in access to basic sanitation, education, and health).

Supported by the findings of chapter 2, Brazil faces particular challenges when it comes to policy actions and implementation of legal instruments such as control and monitoring. The concern turns to the effectiveness of key public institutions to engage to the necessary steps to be taken (e.g. research and technology, incentives, feasible targets, strict deadlines) towards concrete developments in the waste take-back system, particularly for e-waste.

Another weak point is noticeable within the administration, as bureaucratic procedures are a known issue to be overcome in order to fast forward any policy and legal actions. Furthermore, when it comes to population and regional diversity it is worth mentioning the need for a strong engagement of citizens in participating at the collection/take-back. There is no culture of separating waste or taking it back, therefore strong information campaigns are of a key role to this issue.

654. Araújo and others (n 637) 341.

It is worth noting that, at the time in which this research is being concluded, negotiations between industry and government related to the Brazilian legal framework on e-waste are still taking place. Logically, there is the possibility that some of the instruments recommended here are in fact adopted at the time of its publication. This fact is reassuring since it would prove that the research addresses issues that meet the reality. This chapter concludes, therefore, with the claim that it is possible to transplant instruments from EU law into Brazilian law for e-waste recycling, reuse, and recovery through a fully working take-back system, involving different actors successfully.

Furthermore, as one may have noticed, this study could serve of inspiration for recommendations of legal instruments from EU law for other jurisdictions regarding e-waste management and take-back system. It could also be a stepping stone for further research in legal transplants possibilities for the broader topic of other waste streams in case they fall under the same principles and main instruments of the Waste Framework Directive. Further research, therefore, could benefit from the observations made in this work and look further afield to other developing countries still struggling to tackle the growing problem of waste; an increasingly inorganic and toxic issue which is growing fast.

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Samenvatting

De aanpak van het afvalbeheerprobleem in de huidige samenleving is op zichzelf al voldoende uitdagend, maar afgedankte elektrische en elektronische apparatuur (AEEA) onderscheidt zich in haar complexiteit niet alleen door de waardevolle componenten, maar ook door de giftige samenstelling die met het oog op de volksgezondheid en de bescherming van milieu niet mag worden gestort op een stortplaats of worden verbrand. AEEA - ook wel aangeduid als 'e-waste' - is de snelst groeiende afvalstroom als gevolg van de technologische vooruitgang, de economische ontwikkeling en het groeiend consumentisme. Een goed beheer van deze grote hoeveelheden afval vereist veel zorg. De wetten en het overheidsbeleid van over de hele wereld voor het aanpakken van het e-waste beheer bevinden zich jammer genoeg in uiteenlopende stadia. De Braziliaanse situatie toont een recente poging om een goed beheer van de verschillende afvalstromen te regelen. Het nationale beleid inzake vaste afvalstoffen (NPSW) uit 2010 (Federale wet nr. 12.305) wordt erkend als een belangrijke stap in de richting van de ideale inzameling, terugwinning en recycling van afval. Niettemin heeft het bijna twintig jaar geduurd voor deze wet tot stand kwam. Momenteel wordt het proces van de vaststelling van specifieke wetgeving voor het opzetten van een AEEA-systeem vertraagd door problemen bij het maken van afspraken betreffende de taken en verantwoordelijkheden van alle betrokken actoren. Het proces van het ontwikkelen van afvalbeleid in Europa startte in de jaren zeventig toen de eerste Kaderrichtlijn afvalstoffen (75/442/EEG) werd gepubliceerd. Dit proces werd voortgezet en resulteerde in specifieke richtlijnen voor de verschillende afvalstromen. De AEEA-richtlijnen – 2002/96/EG en 2012/19/EU – bevatten een reeks juridische instrumenten voor implementatie van terugnamesystemen voor AEEA in de Europese lidstaten. Enkele van deze instrumenten zijn productontwerp, opvang- en behandelingsdoelen, informatie- en monitoringsystemen en deadlines. In dit onderzoek is het proces geanalyseerd van het ontwikkelen en implementeren van wettelijke regels voor het opzetten van duurzame en voor milieu en mens positieve AEEA-terugnamesystemen in de Europese Unie. Hierbij is speciale aandacht gegeven aan de eigenaardigheden en variaties in de implementatieprocessen van deze richtlijnen als gevolg van de nationale verschillen, achtergrondgeschiedenis, economie en cultuur. Deze factoren zijn geobserveerd en geanalyseerd met behulp van case studies. De belangrijkste officiële bronnen van het on-

derzoek waren wetgeving, officiële rapporten van de Europese Commissie voor de Raad en het Parlement en nationale verslagen. Deze rapporten zijn gebaseerd op de resultaten van de uitvoering van de AEEA-richtlijnen in elk van de Europese lidstaten. Daarnaast zijn kwalitatieve interviews gehouden voor het verduidelijken en het begrijpen van de nuances van het proces. De theorie van de *Legal Transplants* is gebruikt voor de vaststelling van het theoretische kader. Op basis van de Europese ervaringen zijn op grond van deze theorie aanbevelingen opgesteld die een mogelijke bijdrage leveren aan het Braziliaanse proces van het ontwikkelen van specifieke wettelijke instrumenten en maatregelen om een effectief e-waste-terugnamsysteem in te voeren, dat veilig is voor de menselijke gezondheid en het milieu. Het onderzoek en de aanbevelingen beantwoorden de volgende vragen:

In hoeverre kunnen de juridische instrumenten van de Europese AEEA-richtlijnen worden overgenomen in de Braziliaanse rechtsorde ter verbetering en versnelling van het proces van het reguleren van het beheer van e-waste?

a. Welke juridische instrumenten van de AEEA-richtlijnen hebben bijgedragen tot het verminderen van de e-waste beheerproblemen in de Europese lidstaten?

b. Welke juridische instrumenten uit de AEEA-richtlijnen kunnen worden overgenomen en gebruikt als een bron van inspiratie voor het Braziliaanse recht en beleid, rekening houdend met het huidige Braziliaanse kader voor het beheer van e-waste?

De mogelijkheid om wetgeving over te nemen: Legal transplants

Zoals in veel recente democratieën, verrichten de Braziliaanse wetgever en de rechtswetenschap regelmatig vergelijkende studies naar andere nationale rechtsstelsels in geval van noodzaak tot het ontwikkelen van nieuwe, moderne en efficiënte wettelijke regels. De meest geschikte concepten en regels voor de sociale, juridische en politieke realiteit van het land worden vervolgens aangepast om adequaat te kunnen functioneren in het Braziliaanse scenario. Een paar verhelderende voorbeelden van internationale inspiratie verdienen een vermelding. Een eerste voorbeeld is de huidige federale Grondwet. De grondwettelijke bepalingen van de Verenigde Staten, Duitsland, en in het bijzonder Frankrijk, hebben met name invloed gehad en bijgedragen aan de inspiratie bij de creatie van de Braziliaanse Grondwet. Daarnaast is het nationale systeem van toezicht ontleend aan de Amerikaanse en Europese systemen waardoor er in de Braziliaanse wetgeving twee traditionele modellen van constitutionele controle van de normatieve wetgeving en overheids-handelingen van kracht zijn: diffuse en de geconcentreerde controle. Sterker

nog, een belangrijk mechanisme van diffuus toezicht op de grondwettigheid is het instellen van het 'buitengewone beroep'. Deze bijzondere oplossing werd ontwikkeld naar het model van het Noord-Amerikaanse 'writ of error'. Een nog recenter voorbeeld van de internationale invloed is de Anti-corruptie wet nr 12.846 van 2013 die geïnspireerd was door zowel de *Foreign Corrupt Practices Act* in de VS als de *Bribery Act* in het Verenigd Koninkrijk. Tenslotte, en misschien het meest relevante voorbeeld, is er de opmerkelijke invloed van het Amerikaanse rechtstelsel in de constructie van de Braziliaanse Republiek en Federalisme zoals in hoofdstuk 9 is vermeld.

Bij het analyseren van het Europese en Braziliaanse afvalbeleid en het juridische kader moeten de contextuele verschillen niet worden vergeten. Een goede juridische implementatie en handhaving van de EU-afvalwetgeving zijn bijvoorbeeld belangrijke prioriteiten in het Europees milieubeleid. In Brazilië, anderzijds, is het milieubeleid ten aanzien van afval pas onlangs specifiek geregeld en in de schijnwerpers gebracht als een beleidskwestie. De federale wet inzake de vaste afvalstoffen (nr. 12.305/2010) vertegenwoordigt deze verandering in het beleid. Zoals beschreven in hoofdstuk 10 bestaat de Braziliaanse NPSW uit een reeks van beginselen, doelstellingen, instrumenten, richtlijnen en acties die moeten worden ondernomen door de federale regering - zelfstandig of in samenwerking met staten, gemeenten, federale districten of private actoren - gericht op het aannemen van een geïntegreerd milieubeheer van vast afval.

Bij het vergelijken van de keuzes in het Europese en het Braziliaanse afvalbeleid kunnen naast verschillen tevens conceptuele overeenkomsten worden geïdentificeerd. De NPSW bevat bijvoorbeeld een afvalbeheerhiërarchie die duidelijk was geïnspireerd op de Kaderrichtlijn afvalstoffen. Artikel 9 van de NPSW luidt: 'Bij het beheer van vast afval, wordt de volgende prioriteit in acht genomen: non-generatie, reductie, hergebruik, recycling, afvalverwerking en milieuvriendelijke verwijdering'.

Kaderrichtlijn afvalstoffen en de AEEA-richtlijnen

In enkele lidstaten bestond reeds nationale regelgeving voor de bescherming van het milieu voor de totstandkoming van de Europese gemeenschap. Deze lidstaten waren verantwoordelijk voor de rijke bijdragen aan de onderhandelingen die hebben geleid tot het huidige Europese milieurecht. Voor dit onderzoek was het interessant op te merken dat de geschiedenis van het Europese milieubeleid begint met het afvalbeleid. In de jaren 1970 en 1980 werden beleidsmakers gewaarschuwd over de potentiële impact die slecht beheerd afval op het milieu en de menselijke gezondheid zou kunnen hebben, na een aantal problemen en schandalen in verband met de behandeling van afvalstoffen. De lidstaten initieerden nationale maatregelen als reactie op het controleren en beheren van die afval kwesties, hetgeen leidde tot de Kaderrichtlijn afvalstoffen en de Richtlijn gevaarlijke afvalstoffen in 1975. In de opvolgen-

de jaren traden langzamerhand meer stukken van de wetgeving in werking en vormden daarmee de milieuwetgeving van de EU.

Richtlijn 98/2008 is het belangrijkste juridische instrument van de EU voor het beheer van vaste residuen (afval). Eén van de doelstellingen van de richtlijn is het versterken van de economische waarde van die residuen door hun productievermindering prioriteit te maken. De belangrijkste strategie is economische groei scheiden van milieuschade veroorzaakt door de productie van afval om op die wijze de menselijke gezondheid en de kwaliteit van het milieu te beschermen. Vanuit dit perspectief moesten de lidstaten compromissen sluiten om de productie van afval te voorkomen. Voor de gevallen dat het niet produceren niet kan slagen, moeten behandlungs-, terugwinnings- en recyclingsystemen worden ontwikkeld om grote hoeveelheden residuen op stortplaatsen te vermijden. Deze doelstellingen en de in de richtlijn neergelegde beginselen zijn tevens gevolgd in de opvolgende richtlijnen die de verschillende afvalstromen reguleerden, met inbegrip van de AEEA-richtlijnen. De instrumenten en het beleid zijn gecreëerd op grond van een strikte hiërarchie van preventie, voorbereiding voor hergebruik, recycling, het herstellen en enkel dan het elimineren van de afval. Aan deze sterke hiërarchie is een belangrijk element toegevoegd, namelijk duidelijke omschrijvingen van de betrokken actoren en hun rechten en plichten in het proces. De betrokken actoren zijn: de centrale overheid, lokale overheden, producenten, distributeurs, burgers, importeurs, exporteurs, onderzoeksinstituten, universiteiten, instituten. Aangetoond is dat de duidelijke taakverdeling in combinatie met de sterke hiërarchie tot effectieve resultaten leidt.

Het gebruik van economische instrumenten, hetzij om de productie van afval te beperken hetzij om druk uit te oefenen voor betere oplossingen dan het storten van afval, wordt in veel gevallen gezien als een succesvolle ervaring. Economische instrumenten kunnen worden gebruikt als negatieve prikkel, zoals het verhogen van de kosten voor het storten van afval, of door productontwerp aan te moedigen. Voor het versterken van het Europese systeem zijn standaardpatronen voor gezamenlijke toepassing door alle lidstaten en sterke toezichtstructuren ingebouwd. Hiernaast bestaan tevens beheersplannen die nationale, regionale en lokale acties coördineren en integreren.

Tot slot, bij de uitwerking en uitvoering van de regelgeving, heeft de strategie van het benaderen van de industrie en andere belanghebbenden - waaronder het maatschappelijk middenveld - zich bewezen als een effectief instrument om te zorgen voor meer haalbare deadlines, betere praktische oplossingen, en vooral, meer positieve betrokkenheid van allen.

Case Studies

Zoals vermeld in het inleidende hoofdstuk, is de keuze om case studies te verrichten gemaakt om zo de omzetting van de richtlijnen in nationale systemen nader te observeren. Deze keuze had als doel om innovatieve en posi-

tieve voorbeelden van nationale omzettingen te illustreren en zich te concentreren op het evalueren van de bepalingen gebracht door de AEEA-richtlijnen zelf. Daarom was het niet de bedoeling van dit onderzoek om een uitgebreide vergelijkende analyse van de nationale processen uit te voeren. De gekozen landen voor de case studies zijn: Nederland, het Verenigd Koninkrijk, Frankrijk en een aantal van de Scandinavische landen (Denemarken, Finland, Noorwegen en Zweden). De keuze was gebaseerd op hun bovengemiddelde prestaties en innovatieve keuzes voor de regulering van en het instellen van nationale AEEA-systemen.

Braziliaans afvalbeleid en AEEA

In 2014 was de totale productie van e-waste in Noord- en Zuid-Amerika samen 11,7 Megaton (hierna: Mt). De Verenigde Staten zijn met 7,1 Mt de grootste producent van afval, gevolgd door Brazilië met 1,4 Mt. Hierdoor is Brazilië op het continent Amerika één van de grootste e-waste-generators in absolute hoeveelheden. Het is duidelijk dat effectieve oplossingen in praktijk moeten worden gebracht. In Brazilië werden de eerste wetten inzake de bescherming van het milieu aangenomen in de jaren 30 van de vorige eeuw. Dat waren de Boswet, de Waterwet, de Jacht- en Visserijwet, en het Besluit Dierenbescherming. Later, in de jaren '60, werd noodzakelijke wetgeving ontwikkeld voor het benaderen van milieuvraagstukken, terwijl sommige van de reeds bestaande wetten werden herzien. Dit was de periode waarin de nieuwe Boswet en de Faunawet in werking zijn getreden, en het Land Statuut, het Nationaal Beleid voor Basis Volksgezondheid, en de Nationale Raad voor Milieu Verontreinigingscontrole in het leven werden geroepen.

Desalniettemin worden de jaren '80 beschouwd als het decennium waarin de Braziliaanse milieuwetgeving zijn grootste ontwikkelingen zag. Tot die tijd hadden de Braziliaanse wetten de onderwerpen op milieugebied behandeld als een kwestie van economie- en eigendomsbescherming. De focus op het milieu was nog niet erkend en verwerkt tot de tachtigerjaren. Aan deze perceptie kwam een einde door het in werking treden van vier grote federale wetten: de Wet Nationaal Beleid voor het Milieu, de Wet Regulering van Algemeen Belang Civiele Acties, de Federale Grondwet van 1988 en de Wet Regulering van Sancties en Strafmataregelen voor het vernietigen van het milieu. Die nieuwe wetten - opgenomen in het Braziliaanse wettelijke kader - brachten een duidelijker inzicht op het gebied van het milieu, creëerden instrumenten voor de vaststelling van een geïntegreerd beleid van bescherming, alsmede voor de preventie en de definitie van de rechten en verplichtingen van de verschillende betrokken actoren.

Echter, het aanpakken van de problemen die voortvloeien uit ongeschikt afvalbeheer bevindt zich nog in een vroeg stadium, aangezien het Nationale Beleid voor Vaste Residuen pas in 2010 in werking is getreden. Daarom is ervoor gekozen het onderzoek te concentreren op de Europese ervaringen.

Brazilië heeft momenteel behoefte aan de ontwikkeling van een soortgelijk proces. In de jaren die zijn verstreken sinds het in werking treden van de wet die de NPSW heeft gedefinieerd is er vooruitgang geboekt in de discussies en afspraken om afvalstromen als prioriteit te stellen, zoals besproken in hoofdstuk 10.

Dit buitengewoon langzame proces is te wijten aan een gebrek aan structuur. De lange onderbrekingen in de onderhandelingen, de wisseling van regeringen en het gebrek aan duidelijkheid in de wetgeving, leidden allemaal tot een reeks van tegenslagen voor een betere regulering en voor de uitvoering van een nationale terugnamesysteem voor AEEA (en andere afvalstromen). Eén van de eerste doelen die bereikt moesten worden - de deadline van augustus 2014 voor een verbod van de niet-gereguleerde stortplaatsen - kon al niet worden bereikt. In 2014 stelde de Federale Senaat een wetsvoorstel (PLS 425/2014) op voor uitstel, dat is goedgekeurd en verstuurd naar de Kamer van Afgevaardigden. De wet wordt waarschijnlijk goedgekeurd en zal tot nieuwe termijnen leiden - afhankelijk van de grootte van de gemeenten - variërend van 2018 tot 2021. In deze periode hebben intensieve discussies binnen en buiten het politieke veld plaatsgevonden over de gevolgen van het toelaten van het aanzienlijke uitstel en de effecten daarvan op de prioriteit en de perceptie in Brazilië. De onderhandelingen over sectorale overeenkomsten en terugnamesystemen voor de prioritaire afvalstromen bevinden zich in een vergelijkbare impasse. In feite is de strijd van het sectoraal akkoord voor AEEA de motivatie voor dit wetenschappelijk onderzoek geweest. Vanuit dat perspectief richtte dit onderzoek, door het observeren van de Braziliaanse uitdagingen over het onderwerp en het grondig bestuderen van het Europese proces, zich op de mogelijkheid dat één jurisdictie effectief beleid en juridische instrumenten kan bieden aan de andere, hetgeen kan leiden tot betere toekomstige resultaten.

Het bestaan van ongecoördineerde acties in dit land van continentale afmetingen leidt tot verspilling van natuurlijke en economische middelen, 'good practices', kostbare tijd en de gezondheid van de Braziliaanse bevolking.

De conclusies samengevat

Het onderzoek leverde waardevolle gegevens op uit de Europese ervaringen bij het creëren en implementeren van de wetgeving voor het benaderen van het e-waste-probleem, evenals een nadere beschouwing van een aantal van haar lidstaten die uitblonden vanwege hun opmerkelijke resultaten en innovatieve keuzes. Tijdens het onderzoek zijn bepaalde elementen geïdentificeerd die invloed hebben op de realisering van een doeltreffende regulering en de ontwikkeling van nationale systemen voor het beheer van e-waste. Hoe verder deze elementen zijn ontwikkeld in een land, hoe waarschijnlijker het is

dat een nationaal terugnamesysteem voor e-waste tot positieve resultaten leidt.

Ten eerste is het bestaan van nationale onderdelen voor een AEEA-systeem voorafgaand aan de totstandkoming van de Europese AEEA-richtlijn van cruciaal belang. Deze bestaande onderdelen belichamen verschillende gebieden en vergemakkelijken de uitvoering van een nationaal AEEA-systeem. Eén van de onderdelen is de betrokkenheid van de uiteindelijke gebruikers van AEEA (consumenten) bij het AEEA-terugnamesysteem door het brengen van hun e-waste naar de juiste locaties. Dit kan worden bereikt door middel van milieueducatie en campagnes die leiden tot een recycling-cultuur. In de landen waar de burgers bekend zijn met de dynamiek van het scheiden van afval, en, bovenal, met de redenen waarom deze maatregel noodzakelijk is in hun dagelijkse routine was de participatie van consumenten groter. Grotere participatie van de consument leidt tot een hoger niveau van inzameling, minder kosten voor voorlichtingscampagnes en minder ten onrechte verwijderd AEEA.

Een andere factor is reeds bestaande wetgeving. In landen waar al wetgeving bestond op het gebied van de behandeling van e-waste en de rechten, plichten en verantwoordelijkheden van de betrokken actoren, was de betrokkenheid van de verschillende actoren al aanwezig. Over eventuele grotere moeilijkheden van de aanpassing van de reeds bestaande wetgeving aan de Europese richtlijn is geen verslag gedaan. Dit is ook te wijten aan het feit dat reeds bestaande wetgeving werd gebruikt als inspiratie bij het opstellen van de richtlijnen.

Een andere factor die is geïdentificeerd als reeds bestaande gunstige omstandigheid is de aanwezigheid van een goede infrastructuur. In landen waarin de recycle-industrie reeds bestond kon een grotere inspanning worden geleverd in vergelijking met landen waarin dit niet het geval was. Bij de laatstgenoemde landen moesten namelijk aanzienlijke investeringen worden gedaan om een dergelijke gespecialiseerde industrie te ontwikkelen. Deze investeringen vergen tijd en zijn afhankelijk van de juiste economische omstandigheden die niet altijd aanwezig zijn. De discussie over de noodzaak van investeringen leidt tot één van de elementen van de specifieke kenmerken van de groep: de politieke en economische situatie van het land. Zeker in landen waarin een politieke crisis heerst, worden andere beleidsmaatregelen en acties dan afval prioriteit gemaakt. Tijdens een economische crisis is, naast het feit dat de nadruk zal liggen op andere zaken dan het beheer van afvalstoffen, de economie kwetsbaar, waardoor het nog moeilijker is om de recycle-industrie en de productie en verkoop van gerecyclede materialen te beheren (of op te zetten). Infrastructuur omvat ook een relevante factor die specifiek is voor elke staat: geografische kenmerken. Hoe groter de te bereiken afstanden zijn, hoe hoger de transportkosten. Daardoor kent de logistiek meer problemen en kosten in het uitwerken van een goed en winstgevend systeem voor het transport van e-waste in het hele land. Voor sommige staten

zijn de geografische afmetingen een uitdaging en voor anderen is dit de hoogte.

De laatste factor betreft de investeringen en de planning die worden verricht door het land. Dit omvat de technologie, opleiding, prikkels, toezicht en handhaving. Voor lidstaten die strategieën en acties hebben opgezet voor de ontwikkeling van de technologie (waaronder ook de financiering van onderzoek), de opleiding van professionals met kennis en vaardigheden met betrekking tot afvalbeheer, giftige en waardevolle soorten afval, was het goed laten functioneren van een AEEA-systeem niet zo problematisch als voor in de lidstaten die niet hadden geïnvesteerd in deze elementen. Om te zorgen dat de actoren hun rol op een bevredigende wijze uitvoeren, zijn positieve resultaten behaald met het vermijden van illegale en onbekende e-afvalstromen, gratis meeliften en de daaruit voortvloeiende nevenproducten, goede structuren, en beleid voor het toezicht op en de uitvoering van specifieke AEEA-wetgeving. Ook zijn economische stimuleringsmaatregelen en belastingverlagingen van aanzienlijk belang om het AEEA-terugnamesysteem als geheel te versterken. Dergelijke instrumenten hebben veel invloed op het gedrag van verschillende spelers. EEA-producenten kunnen bijvoorbeeld worden gemotiveerd om te investeren in een recyclebaar productontwerp door het aanbieden van belastingvermindering voor degenen die duidelijk investeren in een dergelijk ontwerptype. Ook de logistiek kan worden verbeterd door het elimineren van belastingen (en overige kosten) voor grensoverschrijdend e-wastetransport.

Summary

Tackling any waste management problem of nowadays society is sufficiently challenging, however, the Waste Electrical and Electronic Equipment (WEEE) stands out in its complexity not only due to its valuable components but also to its toxic composition that in order to protect human health and the environment should be prevented from landfills or incineration. As a result of the increase of technological advances, economic development, and consumerism in the last years the WEEE waste stream, also referred to as 'e-waste', has grown the fastest among all waste streams, and a proper management of the amounts of WEEE generated daily calls for great concerns. Unfortunately, laws and public policies to approach e-waste management coexist in the most different stages across the world. The Brazilian context, for instance, evidences a recent attempt to regulate management of different waste stream – WEEE among them – in its national policy law from 2010 (No12.305/10). The policy law is considered an important step towards recovery and recycling, nonetheless, the negotiations that led to it needed almost twenty years to reach this first step. Likewise, the process of following up to more specific legislation to set-up a waste management system for WEEE has faced difficulties in reaching agreements when it comes to roles and responsibilities of all the actors involved. By the time this abstract was written no final decision had been made. The process of developing waste policies in Europe, on the other hand, saw its beginning in the seventies when the first Waste Framework Directive (75/442/EEC) was published, amended in 1991 (91/689/EEC), and replaced by the new Waste Framework Directive in 2008 (2008/98/EC). The process continued further, and unfolded into different directives which were specific to each waste streams, as it was the case with WEEE in 2002 (2002/96/EC), and its recast directive in 2012 (2012/19/EU). The WEEE Directives included a series of instruments to enable take-back systems for WEEE to be implemented nationally in each European Member States. Some of the instruments were extended producer responsibility, product design, collection and treatment targets, information and monitoring systems and deadlines. This study has analysed the process of developing and implementing legal rules for the setup of sound – for the environment and human health – and sustainable WEEE take-back systems in the EU. A particular focus was given to the legal instruments and principles adopted by the Directives, and the peculiarities and variations due to national differences,

background history, economy and culture were factors observed and analysed with the help of the study cases. Official reports of the European Commission to the Council and Parliament, as well as national reports were the main official source to identify most successful examples of national Member State implementation. The reports were based on the individual results of the transplantation of the WEEE Directives in each EU Member State. The research then dedicated a closer look to variations in the process of implementation of the Directives and the set-up of national systems for WEEE by choosing a few case studies. Academic literature and qualitative interviews were also instruments for this study. Finally, through the lenses of the legal transplants theory as the theoretical framework, recommendations based on the European model have been drafted as possible contributions to enhance the Brazilian process of developing specific legal instruments and policies to establish an effective e-waste take-back system safe to human health and the environment.

The Possibility to Borrow Legislation: Legal Transplants

As it is the case with many recent democracies, in some of the cases when new regulations become necessary, Brazilian legislators and legal scholarship regularly develop comparative studies on other national legal systems in order to develop accurate, modern, and efficient rules. Once a decision is made, the concepts and rules identified to be the most suitable ones to the social, legal, and political reality of the country will then be adapted to the Brazilian scenario in order to be adequately incorporated.

A few enlightening examples of international inspiration should be mentioned. For instance, the current Federal Constitution itself. The constitutional provisions of the United States, Germany, and especially France, are notably recognised as influencing and contributing with the inspiration to the creation of this Brazilian Constitution. Furthermore, in Brazilian law there are two traditional models of constitutional control of normative laws and acts of government currently in force: the diffuse and the concentrated one. The reason is that the national system of judicial review comprises the American and the European systems.⁶⁵⁵ Even more, an important mechanism of diffuse

655. LR Barroso, 'Ano do STF: Judicialização, ativismo e legitimidade democrática' (Consultor Jurídico 22 December 2008) 2 <www.conjur.com.br/2008-dez-22/judicializacao_ativismo_legitimidade_democratica> accessed 19 May 2016. With regard to the diffuse and incidental constitutional control the American formula was adopted in which any judge or court may choose to cease to apply a law in a particular case if such law is considered unconstitutional. For to the control by direct action, which allows certain matters to be brought to the Supreme Court's decision, this originates from the European model.

control of constitutionality is the creation of the ‘extraordinary appeal’.⁶⁵⁶ This exceptional remedy was developed according to the model of the North-American ‘writ of error’.⁶⁵⁷ An even more recent example of international influence is the Anti-corruption Law No 12.846 of 2013 which has been substantially inspired both in USA’s Foreign Corrupt Practices Act (FCPA) and UK’s Bribery Act.⁶⁵⁸ Finally, and possibly the most relevant example, is the remarkable influence of the U.S. legal system in the construction of the Brazilian Republic and Federalism as it has been mentioned in chapter 9.

Certainly it is worth noting that when observing European and Brazilian waste policies and framework relevant contextual differences should not be overlooked. For instance, proper legal implementation, and enforcement of EU waste legislation are key priorities in the European environmental policy; in Brazil, on the other hand, the environmental policy towards waste has only recently been specifically regulated and brought into focus as a policy matter. The Federal Law approaching the solid waste matter (Federal Law No 12.305/2010) represents this change in policy. As seen in chapter 10 the Brazilian NPSW is a set of principles, objectives, instruments, guidelines, goals and actions to be adopted by the Federal Government itself or by its partnership with states, municipalities, federal district and private actors of the society aiming at the integrated and environmentally sound management of the solid waste.

At the same time, some conceptual similarities can be identified when comparing European Directives and Brazilian legislation focusing the waste problem, as for example the federal regulation for solid waste brought a similar priority hierarchy to the European Directive, the Art. 9. States the following: ‘When managing solid waste, the following priority shall be observed: non-generation, reduction, reutilization, recycling, solid waste treatment and environmentally sound disposal’. Another example is the choice for specifying target-goals to be achieved in a clearly-defined deadline, among others.

Nevertheless, the considerably slow process is due to a lack of structure. The implementation of the NPSW has been struggling with some difficulties, for example, the deadline of August 2014 for bans of unregulated dumps could not be reached. In 2014 the Federal Senate drafted a Bill (PLS 425/2014) for its postponement which has been approved and sent to the

656. In Portuguese, *recurso extraordinário*. A procedural instrument to ensure the uniform application of laws and the Constitution itself.

657. Established by the north-American Judiciary Act of 1789. Guilherme Beux Nassif Azem, ‘A instrumentalidade objetiva do recurso extraordinário’ (2011) 48(190) *Revista de Informação Legislativa* Brasília 205-210, 206.

658. Brazil, Lei Nº 12.846, de 1º de agosto de 2013. It provides for administrative and civil liability of legal persons for the practice of acts against public, national or foreign administration, and other measures, *Diário Oficial da União*, Brasília (DF), 2 de agosto de 2013, 1; USA, Public Law 95-213, title I, 91 Stat. 1494, 19 December 1977; UK, Bribery Act, chapter 23, 8 April 2010.

Chamber of Deputies. The Bill is most likely to be approved and bring new deadlines – according to the size of the municipalities – which will vary from 2018 to 2021. During this period there have been intense debates inside and outside the political scenario as to the consequences of allowing for such considerable postponement and its impacts on this matter's priority and perception in Brazil.

In similar paths of struggles and setbacks are the negotiations of Sectoral Agreements and Take-back systems for the priority waste streams. In fact, the struggle of the sectoral agreement for WEEE has been the motivation to this academic research. Having that in mind, by observing the Brazilian challenges on the topic, and studying thoroughly the European process, this research focused on the possibility to one jurisdiction be able to provide effective policy and legal instruments to the other which could lead to better future results.

European Waste Framework and WEEE Directives

The national regulations for environmental protection already existing in some of the countries that would become the European Union were responsible for rich contributions to the negotiations that led to the European Environmental Law as it is today. For this research, it was interesting to notice that the 'history of the environmental policy of EU begins with waste policy. In 1970s and 1980s a number of problems and scandals related to the handling of waste alerted policy makers to the potential impact that poorly managed waste could have upon the environment and human health.'⁶⁵⁹ The Member States initiated national measures as a response to control and manage those waste issues, which led to the Waste Framework Directive and the Hazardous Waste Directive adopted in 1975. Slowly, in the following years, more pieces of legislation came into force creating the environmental law of EU.⁶⁶⁰

As observed earlier in this book, the Directive 98/2008 is the main legal reference of the EU for the management of solid residues (waste). One of its objectives is to strengthen the economic value of those residues by prioritizing the reduction of their production. The attempt to detach economic growth from the environmental damages caused by waste production as a way to protect human health and the quality of the environment around it is the main strategy. From this perspective, Member States had to compromise to avoid production of waste and establish treatment, recovery and recycling systems able to divert great amounts of residues heading to landfills, once their production could not be avoided. The objectives as well as the principles set by

659. Federico Magalini, 'Driving Factors in WEEE Management System Design' (PhD thesis, Politecnico di Milano 2007) 34.

660. See specific regulation for WEEE based on ERP since 1992 in Switzerland, for instance.

this directive followed the further Directives regulating the different waste streams, including the WEEE Directives. The instruments and policies built around a strictly adopted hierarchy of preventing, preparing for reused, recycling, recovering and only then, eliminating, added to the key element of clear definitions of actors and their roles (rights and obligations) in the process – central government, local authorities, producers, distributors, citizens, importers, exporters, among others – as well as research organisations, universities, institutions, has shown to bring effective results.

The adoption of economic instruments either to minimise waste production or to pressure for better solutions other than landfilling has been observed as a successful experience in many cases. Economic instruments can be applied either as inhibitors for actions such as increasing fees for sending waste to landfill, or as a resource to encourage product design, for instance. Standard patterns created for a common application by all, reinforced by strong structures for monitoring are also adopted in the European framework for strengthening the system. Besides management plans which coordinate and integrate national, regional, and local actions.

Finally, when elaborating and implementing the regulations, the strategy of approaching industry and other stakeholders – including civil society – has proven to be an effective tool to provide for more achievable deadlines, better practical solutions, and, above all, more positive engagement from all.

Case Studies

As mentioned in the introductory chapter of this work, the choice for study cases sought to observe closer the transposition of the Directives into national systems. The choice had as purpose to illustrate innovative and positive examples of national transpositions and focusing on evaluating the provisions brought by the WEEE Directives themselves. It was not, therefore, the purpose of the research to perform an extensive comparative analysis of national processes of European Members States transposing an implementing the WEEE Directives.

The chosen Member States were the Netherlands, the United Kingdom, France and some of the Nordic Countries (Denmark, Finland, Norway, and Sweden) based on their average or above average performance, and their innovative choices for regulating and setting a WEEE system nationally.

Brazilian Waste Policies and WEEE

In the Americas, the total e-waste generation was 11,7 Mt in 2014. Brazil is one of the highest e-waste generators in absolute quantities with 1,4 Mt and

fall behind only the United States with 7,1 Mt.⁶⁶¹ It is clear that effective solutions urge to be adopted and put into practice. In Brazil, the first laws concerning environmental protection were issued in the 30's. Those were the Forest Code, the Water Code, the Hunting and Fishing Code, and the Animals Protection Decree.⁶⁶² Later, in the 60's, legislations considered crucial for approaching environmental issues were created, while some of the pre-existing one were recast. This was the period when the new Forest Code and Fauna Protection Law came into force, and the Land Statute, National Policy on Basic Sanitation, and National Council on Environmental Pollution Control were issued.⁶⁶³

Nonetheless, the 80's are considered the decade when the Brazilian environmental legislation saw its greatest developments. Until that period, Brazilian laws had treated the topics included in environmental sphere as a matter of economic and property protection. The focus on the environment had not yet been recognised and incorporated until the 80's. A perception which was then changed by the come into force of four main federal laws: National Policy for the Environment; Law Regulating Public-interest Civil Action, Federal Constitution of 1988, and Law regulating sanctions and punitive measures for destroying the environment.⁶⁶⁴ Those new laws incorporated to the Brazilian legal framework brought a clearer understanding towards the environment, created instruments for establishing integrated policies of protection, as well as for prevention, and defined rights and obligations to the different actors involved.

However, tackling the problems deriving from improper waste management issues are still in an early stage, as the National Policy for Solid Residues has been established recently, in 2010. For this reason, this work chose to focus on the European model. Brazil is currently in need of the development of a similar process. In the years that have passed since the come into force of the law which defined the National Policy for Solid Residues there has been progress on discussions and agreements for the waste streams set as priorities, as discussed in chapter 10. However, at the same time, long gaps in negotiations, change of governments, lack of clarity in the legislation, all lead to a series of setbacks for better regulating and finally implementing a national take-back system for WEEE (and other waste streams). The existence of uncoordinated actions throughout this country which has the dimensions of a continent are wasting natural and economic resources, good practice ideas, valuable time and the health of the Brazilian population.

661. Kees Baldé and others (n 535) 40, 64.

662. Respectively: Dec. No 23.793/34, Dec. No 24.643/34, Dec. No 23.672/34, and Dec. No 24.645/34.

663. Respectively: Law No 4.771/65, Law No 5.197/67, Law No 4.504/64, Dec. No 248/67, and Dec. No 303/67.

664. Respectively: Federal Law No 6.938/81, Law No 7.347/85, Constitution 1988 Art. 225 caput and Art. 5 LXXIII, and Law No 9.605/98.

Summarized Conclusions

During this research, certain elements have been identified as contributing to more successful regulation and implementation of systems for e-waste management. The further each of these are found to have been developed in a certain society, the more likely a take-back system for the environmentally correct and humanly safe collection, reuse, recycling and recovery of e-waste is properly working. These elements could be visualized in three groups: the pre-existing favourable structures, the specific characteristics, and the investment and planning elements.

The study performed along the previous chapters provides valuable data on the European model of creating and implementing legislation for approaching the e-waste problem, as well as a closer look to some of its Member States which have stood out due to remarkable results and innovative choices.

One of the main observations of this research is the existence of favorable structures, in a Member State, for a WEEE system previous to the issuing of the European Directive on WEEE. These favourable structures represent different fields. The engagement of final users of WEEE (consumers) to the take-back system of WEEE by bringing their e-waste to the appropriate locations, and not disposing it with the household waste not storing it indefinitely is a reflex of environmental awareness. This comes as a result of investments in environmental education and campaigns, which lead to a culture of recycling. Therefore, in the case of countries where citizens were already familiar with the dynamics of separating waste, and, above all, with the reasons why this action is necessary in their daily routine, were the ones with greater participation of consumers, which leads to higher levels of collection, less costs on campaigns to inform the consumers, less WEEE inappropriately disposed.

Pre-existing legislation is another factor that influenced the process of implementing the European directives for WEEE. In the case of countries where there was already some legislation approaching the need for e-waste to be properly handled and dealt with, where roles and responsibilities had already been distributed, the cooperation of the actors of this dynamics was already in place. No report on greater difficulties on the adaptation of pre-existing legislation to the European Directive has been made. Also due to the fact that during then drafting of the directives, legislation already in place was observed and used as inspiration.

Finally, another factor identified as included in the category of pre-existing favourable conditions is the presence of proper infra-structure. Wherever the recycling industry has already been set up, greater efforts can be saved considering that considerable investments must be made in order for such a specialised industry to be available. And investments take time, and depend on economic conditions that are not always present. The discussion about the need for investments leads to one of the elements of the specific

characteristics group: political and economic situation of the country. Certainly countries where political distress is present, other policies and actions are prioritized other than the ones focusing on waste. In the same sense, during an economic crisis, beyond the fact that the focus will be on other matters than waste management, when an economy is fragile, the task to maintain (or specially set up) the recycling industry and the production and sales of recycled materials are even greater.

This group also takes into account another element that is specific to each State: its geographical characteristics. 'The broader the distances to be reached the higher are the costs in transportation'. For that, logistics has more difficulties and expenses on elaborating a proper and profitable system for transporting e-waste across the country. For some states the geographical dimensions are the challenge. For others, the terrain, the altitude.

At last, the investment and planning elements group takes into account technology, training, incentives, monitoring and enforcement. In the case of Member States which have invested and programmed strategies and actions for development of technology (also including financing research), training of professionals with knowledge and skills related to waste management, toxic and valuable types of waste, to have a WEEE system properly running was not as problematic as in Member States who had not invested in those elements. At the same time, in order to maintain the actors playing their roles in a satisfactory manner, avoiding, therefore, illegal and unknown e-waste flows, as well as free riders and their consequent orphan products, good structures and policies for monitoring and implementing the specific legislation on WEEE has clearly promoted positive outcomes. In the same direction, economic incentives and tax reductions are considerably important to strengthen the WEEE take-back system as a whole. Such instruments represent great influence on the behaviour of different players. For instance, to motivate EEE manufactures to invest in product design for recycling by offering tax reduction on those who clearly invest on such type of design, or to lead to better logistics by eliminating taxes (and fees) across borders when it comes to e-waste transportation.

Appendix

Figure Appendix Map of Brazil: 26 Federal States and 1 Federal District



Acre (AC) - Law No 1.117 of 1994 provides for the environmental policy of the State of Acre, among other topics (Articles 27 VIII, 29, 33, 90 §2, 120 XII). Law No 2.539 of 2012 provides for the obligation of manufacturers,

distributors and vendors of electronic equipment installed in the State to create and maintain a collection program and recycling, among others.⁶⁶⁵

Alagoas (AL) - Law No 7.081 of 2009 establishes the State Policy of Sanitation, disciplines the public consortium and cooperation agreement between federated entities to authorize the associated management of public sanitation services, among others. Law No 7.749 of 2015 provides for the State Policy on Solid Waste and Productive Inclusion, and other measures.⁶⁶⁶

Amapá (AP) - Law No 1.398 of 2009 lays on principles, guidelines and standards for the integrated management of construction waste by the State Public Administration and provides other related instructions.⁶⁶⁷

Amazonas (AM) - Law No 4.022 of 2014 requires companies that produce and distribute polyethylene terephthalate packages (PET) or plastic packages in general, and that use these packages in marketing their products in the State, to structure and implement, together, a collection and environmentally sound disposal system, and other measures.⁶⁶⁸

Bahia (BA) - Law No 12.932 of 2014 establishes the State Policy on Solid Waste. Law No 10.431 of 2006 establishes the Environmental Policy and Biodiversity Protection on the State.⁶⁶⁹

Ceará (CE) - Law No 12.225 of 1993 considers the separate collection and recycling of residues as ecological activities of social relevance and public interest. Law No 13.103 of 2001 establishes the State Policy on Solid Waste.⁶⁷⁰

Espírito Santo (ES) - Law No 9.264 of 2009 establishes the State Policy on Solid Waste and provides other related measures. Law No 9.163 May 21, 2009 provides for the creation and maintenance of the collection, recycling or destruction systems for fluorescent lamps, equipment, chargers and mobile

665. The Laws can be accessed at <www.al.ac.leg.br/leis/2014/09/lei-n-1-117-de-26-de-janeiro-de-1994/> and <www.al.ac.leg.br/leis/2014/09/lei-n-2-539-de-4-de-janeiro-de-2012/> Assembleia Legislativa do Estado do Acre.

666. The Laws can be accessed at <www.gabinetecivil.al.gov.br/legislacao/gabinete> Gabinete Civil do Estado de Alagoas.

667. The Law can be accessed at <www.al.ap.gov.br/ver_texto_lei.php?iddocumento=25169> Assembleia Legislativa do Estado do Amapá.

668. The Law can be accessed at <<http://legislador.aleam.gov.br/LegislatorWEB/LegislatorWEB.ASP?WCI=LeiTexto&ID=201&inEspecieLei=1&nrLei=4022&aaLei=2014&dsVerbete=>>> Assembleia Legislativa do Estado do Amazonas.

669. The Laws can be accessed at <www.legislabahia.ba.gov.br/> Casa Civil do Estado da Bahia.

670. The Laws can be accessed at <www.al.ce.gov.br/legislativo/legislacao5/leis93/12225.htm> and <www.al.ce.gov.br/legislativo/legislacao5/leis2001/13103.htm> Assembleia Legislativa do Estado do Ceará.

phone batteries, batteries containing metallic mercury, as well as other devices containing heavy metals. Law No 9941 of 2012 provides for rules and procedures for the separate collection, management and final disposal of 'e-waste', and other measures.⁶⁷¹

Goiás (GO) - Law No 14.248 of 2002 provides for the State Policy on Solid Waste, among other measures.⁶⁷²

Maranhão (MA) - Law No 8.193 of 2004 provides for research, experimentation, production, packaging and labeling, transportation, storage, sale, use, import, export, registration the final destination of waste and empty containers, control, inspection and surveillance of pesticides, their components and alike in the State of Maranhão, among other provisions. Law No 9.279 of 2010 establishes the State Policy on Environmental Education and the State System of Environmental Education.⁶⁷³

Mato Grosso (MT) - Law No 7.862 of 2002 provides for the State Policy on Solid Waste and other measures. Law No 9.535 of 2011 provides for the use of plastic bags, for the storage and disposal of household residues, in the same colors of the respective containers of separate collection.⁶⁷⁴

Mato Grosso do Sul (MS) - Law No 1.238 of 1991 regulates the use, production, marketing and storage of pesticides, their components and the like, and other measures. Law No 2.080 of 2000 sets out principles, procedures and criteria for the generation, handling, storage, transport collection, treatment and disposal of solid residues in the State for the control of pollution, contamination and minimization of environmental impact, among other provisions.⁶⁷⁵

Minas Gerais (MG) - Law No 13.766 of 2000 provides for the State Policy of supporting and encouraging the separate collection of solid residues, and

671. The Laws can be accessed at <www.conslegis.es.gov.br/> Secretaria de Estado de Governo do Estado do Espírito Santo.

672. The Law can be accessed at <www.gabinetecivil.go.gov.br/pagina_leis.php?id=2353> Gabinete Civil do Governo do Estado de Goiás.

673. The Laws can be accessed at <http://arquivos.al.ma.leg.br:8080/ged/legislacao/LEI_8193> and <http://arquivos.al.ma.leg.br:8080/ged/legislacao/LEI_9279> Assembleia Legislativa do Estado do Maranhão.

674. The Laws can be accessed at <www.al.mt.gov.br/storage/webdisco/leis/lei_2681.pdf> and <www.al.mt.gov.br/storage/webdisco/leis/lei_5486.pdf> Assembleia Legislativa do Estado do Mato Grosso.

675. The Laws can be accessed at <<http://aacpdappls.net.ms.gov.br/appls/legislacao/secoge/govato.nsf/1b758e65922af3e904256b220050342a/0fd599844fb16b3e04256e450002ebel?OpenDocument&Highlight=2,1,238>> and <<http://aacpdappls.net.ms.gov.br/appls/legislacao/secoge/govato.nsf/1b758e65922af3e904256b220050342a/9a49a1f423f2b33e04256bfd00678ef9?OpenDocument&Highlight=2,2,080>> Governadoria do Estado do Mato Grosso do Sul.

other measures. Law No 18.031, of 2009 provides for the State Policy on Solid Waste.⁶⁷⁶

Pará (PA) - Law No 5.887 of 1995 establishes the State Environmental Policy, and other measures. Law No 6.918 of 2003 establishes the State Policy for Recycling of Materials, and other measures⁶⁷⁷

Paraíba (PB) - Law No 9.129 of 2010 establishes standards and procedures for the recycling, management and final disposal of technological residues, and other measures.⁶⁷⁸

Paraná (PR) - Law No 12.493 of 1999 establishes principles, procedures and criteria for the generation, handling, storage, collection, transportation, treatment and disposal of solid residues in the State of Paraná, aiming to control pollution, contamination and minimizing environmental impact and adopts other measures. Law No 15.851 of 2008 provides that the production companies, distributors and sellers of computer equipment installed in the State are obliged to create and maintain a collection, recycling or computer hardware destruction Program, causing no environmental pollution. Law No 16.411 of 2010 declares of public interest the electro electronic waste recyclers E-LIXO Association.⁶⁷⁹

Pernambuco (PE) - Law No 12.008 of 2001 (Repealed by Law No 14.236/2010) provides for the State Policy on Solid Waste, and other measures. Law No 13.908, 2009 provides for the obligation of producers, distributors and sellers of computer equipment installed in the State to create and maintain a collection, recycling or destruction programs of computer

676. The Laws can be accessed at

<www.almg.gov.br/consulte/legislacao/completa/completa.html?tipo=LEI&num=13766&comp=&ano=2000> and

<www.almg.gov.br/consulte/legislacao/completa/completa.html?tipo=LEI&num=18031&comp=&ano=2009> Assembleia Legislativa do Estado de Minas Gerais.

677. The Law can be accessed at <www.semas.pa.gov.br/2009/03/23/9423/> and

<www.semas.pa.gov.br/2006/10/10/9772/> Secretaria de Meio Ambiente e Sustentabilidade do Governo do Estado do Pará.

678. The Law can be accessed at

<http://201.65.213.154:8080/sapl/sapl_documentos/norma_juridica/11027_texto_integral> Assembleia Legislativa da Paraíba.

679. The Laws can be accessed at

<www.legislacao.pr.gov.br/legislacao/pesquisarAto.do?action=exibir&codAto=2334&indice=1&totalRegistros=1> and

<www.legislacao.pr.gov.br/legislacao/pesquisarAto.do?action=exibir&codAto=9158&indice=1&totalRegistros=1> and

<www.legislacao.pr.gov.br/legislacao/pesquisarAto.do?action=exibir&codAto=53741&indice=1&totalRegistros=>> Casa Civil do Governo do Estado do Paraná.

equipment. Law No 14.236 of 2010 provides for the State Policy on Solid Waste, and other measures.⁶⁸⁰

Piauí (PI) - Law No 5.733 of 2008 provides for the State policy of recycling materials, among other measures. Law No 6.565 of 2014 provides for environmental education and establishes the State Environmental Education Policy, among other provisions.⁶⁸¹

Rio de Janeiro (RJ) - Law No 4.191 of 2003 provides for the State Policy on Solid Waste Integrated Management, and other provisions. Law No 6.805 of 2014 amends Law No 4.191/2003 by instituting the obligation of implementation of take-back systems for waste electrical and electronic equipment, pesticides, tires, and lubricant oils.⁶⁸²

Rio Grande do Norte (RN) - Law No 8.672 of 2005 provides for the control of production, trade, use, storage, internal transportation and final destination of pesticides packaging and residues, their components and alike, among other provisions.⁶⁸³

Rio Grande do Sul (RS) - Law No 9.921 of 1993 provides for the management of solid residues, in accordance with Article 247, paragraph 3 of the State Constitution and other provisions. Law No 13.533 of 2010 establishes rules and procedures for the recycling, management and final disposal of technological waste, among other measures.⁶⁸⁴

Rondônia (RO) - Law No 1.145 of 2002 establishes the policy and creates the solid residues management system in the State, among other provisions. Law

680. The Laws can be accessed at

<<http://legis.alepe.pe.gov.br/arquivoTexto.aspx?tiponorma=1&numero=12008&complemento=0&ano=2001&tipo=>> and

<<http://legis.alepe.pe.gov.br/arquivoTexto.aspx?tiponorma=1&numero=13908&complemento=0&ano=2009&tipo=>> and

<<http://legis.alepe.pe.gov.br/arquivoTexto.aspx?tiponorma=1&numero=14236&complemento=0&ano=2010&tipo=>> Assembleia Legislativa do Estado de Pernambuco.

681. The Laws can be accessed at <<http://legislacao.pi.gov.br/legislacao/default/ato/13380>> and <www.diariooficial.pi.gov.br/diario.php?dia=20140730> Governo do Estado do Piauí.

682. The Laws can be accessed at

<<http://alerjln1.alerj.rj.gov.br/contlei.nsf/f25edae7e64db53b032564fe005262ef/cf0ea9e43f8af64e83256db300647e83?OpenDocument&Highlight=0,4191>> and

<<http://alerjln1.alerj.rj.gov.br/contlei.nsf/f25edae7e64db53b032564fe005262ef/65090d62b870818e83257d010060b83c?OpenDocument&Highlight=0,6805>> Assembleia Legislativa do Estado do Rio de Janeiro.

683. The Law can be accessed at

<www.al.rn.gov.br/porta/_ups/legislacao/Lei%20Ord.%208.672.pdf> Assembleia Legislativa do Estado do Rio Grande do Norte.

684. The Laws can be accessed at

<www.al.rs.gov.br/legis/M010/M0100018.asp?Hid_IdNorma=14221&Texto=&Origem=1> and

<www.al.rs.gov.br/legis/M010/M0100018.asp?Hid_IdNorma=55184&Texto=&Origem=1> Assembleia Legislativa do Estado do Rio Grande do Sul.

No 2.962 of 2013 establishes rules and procedures for the recycling and final disposal of household appliances and consumer electronics products considered as technological residues, within the State.⁶⁸⁵

Roraima (RR) - Law No 411 of 2003 provides for the mandatory implementation of Residues Reduction Program and other measures. Law No 416 of 2004 provides for the State Policy on Solid Waste Integrated Management, and other provisions.⁶⁸⁶

Santa Catarina (SC) - Law No 11.347 of 2000 provides for the collection, and final destination of potentially hazardous solid waste mentioned in it, among other measures. Law No 13.557 of 2005 provides for the State Policy on Solid Waste, and adopts other measures. Law No 15.112 of 2010 provides for the prohibition of disposal of reusable and recyclable solid waste in dumps and landfills.⁶⁸⁷

São Paulo (SP) - Law No 9509 of 1997 provides for the State Environmental Policy, its purposes and formulation mechanisms, and application. Law No 12.300 of 2006 establishes the State Policy on Solid Waste and defines principles and guidelines. Law No 13.576 of 2009 establishes rules and procedures for recycling, management and disposal of technological waste.⁶⁸⁸

Sergipe (SE) - Law No 5.857 of 2006 provides for the State Policy on Integrated Management of Solid Residues, and gives related measures. Law No 5.858 of 2006 provides for the State Environmental, Policy establishing the State System of Environment, and provides related measures.⁶⁸⁹

685. The Laws can be accessed at <http://sapl.al.ro.leg.br/sapl_documentos/norma_juridica/3122_texto_integral> and <http://sapl.al.ro.leg.br/sapl_documentos/norma_juridica/6071_texto_integral> Assembleia Legislativa do Estado de Rondônia.

686. The Laws can be accessed at <www.tjrr.jus.br/legislacao/phocadownload/leisOrdinarias/2003/Lei%20Estadual%20411-2003.pdf> and <www.tjrr.jus.br/legislacao/phocadownload/leisOrdinarias/2004/Lei%20Estadual%20416-2004.pdf> Tribunal de Justiça do Estado de Roraima.

687. The Laws can be accessed at <http://200.192.66.20/alesc/docs/2000/11347_2000_lei.doc> and <http://200.192.66.20/alesc/docs/2005/13557_2005_lei.doc> and <http://200.192.66.20/alesc/docs/2010/15112_2010_lei.doc> Assembleia Legislativa do Estado de Santa Catarina.

688. The Laws can be accessed at <www.al.sp.gov.br/repositorio/legislacao/lei/1997/lei-9509-20.03.1997.html> and <www.al.sp.gov.br/repositorio/legislacao/lei/2006/lei-12300-16.03.2006.html> and <www.al.sp.gov.br/repositorio/legislacao/lei/2009/lei-13576-06.07.2009.html> Assembleia Legislativa do Estado de São Paulo.

689. The Laws can be accessed at <www.al.se.gov.br/Detalhe_Lei.asp?Numerolei=5932> and <www.al.se.gov.br/Detalhe_Lei.asp?Numerolei=5933> Assembleia Legislativa do Estado de Sergipe.

Tocantins (TO) - Law No 224 of 1990 regulates pesticides and other measures. Law No 261 of 1991 provides for the environmental policy of the State of Tocantins and other measures.⁶⁹⁰

690. The Laws can be accessed at <www.al.to.gov.br/legislacaoEstadual> Assembleia Legislativa do Estado do Tocantins.

Curriculum Vitae

Heyd Fernandes Más was a scholarship PhD candidate of BABEL project (European Commission Action 2 Programme) at the Department of Constitutional Law, Administrative Law & Public Administration at the University of Groningen from October 2013 to September 2016. She holds a BA in International Relations (2004) from the Pontifical Catholic University of São Paulo, Brazil, a BA in Law (2008) and a Master of Science Degree in Political Economic and Law (2011) from Mackenzie Presbyterian University, Brazil. She has experience with academic research in the fields of International Relations and Law with emphasis on Public Policies for the Environment and International Law (waste prevention and reduction towards a circular economy). Some of the topics of her previous academic works include; Brazil as a candidate to United Nations Security Council – analysis of speeches of Presidents Fernando Henrique and Lula; The case of Illegal Bolivians working in São Paulo and the application of the Brazilian Statute of Laws for Foreigners; Eco-migrants, Environmental Refugees or Environmentally Misallocated: vulnerable populations and climate change; The Influence of Economic Agents in the Lawmaking Process of Environmental Laws.